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SECRETARY OF THE AIR FORCE**



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**OFFUTT AIR FORCE BASE  
Supplement**

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**Medical Command**

**MANAGING RADIOACTIVE MATERIALS IN  
THE US AIR FORCE**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFI 40-2, *Radioactive Materials (Non-Nuclear Weapons)*. It applies to Department of Defense (DOD) personnel, Department of Energy (DOE) personnel, DOE prime contractors, and other civilian contractors who bring radioactive materials onto or use radioactive materials on any Air Force owned or leased property. It sets forth how Air Force personnel or units manage (to include acquire, receive, use, store, transfer, transport, distribute, and dispose of) all radioactive material not expressly excluded from the purview of the AFI. This AFI also prescribes how non-Air Force activities get approval to use radioactive materials on Air Force installations. Radioactive material covered by this instruction includes, without limitation, byproduct, source, or special nuclear material, and naturally occurring or accelerator produced radioactive materials that fall under the control of the US Air Force Radioisotope Committee. This does not apply to nuclear reactor programs, nuclear weapon systems and fuel and other material controlled under Section 91(a) or 91(b) of the Atomic Energy Act (AEA) unless such are not covered by AFI 91-101, *AF Nuclear Weapons Surety Program* or AFI 91-109, *Air Force Nuclear Reactor Program* or any other instruction managed by the Air Force Safety Center (AFSC). The handling of waste from operations involving nuclear munitions

maintenance is discussed in context with AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation and 91(b) Radioactive Material Safety Program*. Persons subject to the Uniform Code of Military Justice (UCMJ) who violate requirements and prohibitions or deviate from standards contained in this AFI are subject to punishment under UCMJ, Article 92, for failure to obey an order or regulation, or for dereliction of duty. Civilian AF employees are subject to administrative disciplinary action, in addition to any applicable criminal or civil sanctions for the violation of requirements and prohibitions contained in this AFI. This instruction complies with the Privacy Act of 1974. The authority to collect and keep the information required by this instruction is in Title 5 United States Code (5 U.S.C.) 552a (Public Law 93-579), DOD Directive 5400.11, *DOD Privacy Program*, and AFI 33-332, *Air Force Privacy Act Program*. All records created as a result of processes prescribed in this publication will be maintained in accordance with AFMAN 37-123, (will become AFMAN 33-363) *Management of Records* and disposed of in accordance with the *Air Force Records Disposition Schedule (RDS)* located at <https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm>. Send comments and suggested improvements on AF IMT 847, *Recommendation for Change of Publication*, through appropriate channels, to AFMS A/SG3PB, 1400 Key Blvd, Nash Bldg, Suite 400, Arlington, VA 22209-1554.

**(OFFUTTAFB)** This regulation supplements AFI 40-201, *Managing Radioactive Materials in the US Air Force*, 13 April 2007. It establishes the comprehensive Offutt AFB radiation protection program and the “as low as reasonably achievable” (ALARA) policy by defining responsibilities and procedures for controlling all ionizing and nonionizing radiation. It also sets procedures for controlling radiation sources used by contractors on base and for investigating and reporting radiological accidents and incidents. These radiation protection procedures apply to all Air Force military and civilian personnel, Air National Guard (ANG) units and members and associate organizations involved in the operation of electronic equipment or use of radioactive materials which produce ionizing or nonionizing radiation on Offutt AFB or geographically-separated areas under their control. Medical and dental diagnostic exposures, Department of Defense (DOD) weapons shipments, and Department of Energy (DOE) activities related to SAFE HAVEN requirements are exempt. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the *Air Force Records Disposition Schedule (RDS)* located at <https://afrims.amc.af.mil/>. Send comments and suggested improvements using AF Form 847, *Recommend Change of Publication*, through channels to: 55 CS/SCXKP, 201 Lincoln Hwy, Suite 206, Bldg 41, Offutt AFB, NE 68113. This publication requires the collection and maintenance of information subject to the Privacy Act of 1974. The authority to collect and maintain information prescribed in this publication is Title 10 U.S.C. 55, Medical and Dental Care; 10 U.S.C. 8013, Secretary of the Air Force, 29 CFR 1960; Occupational Illness/Injury Reporting Guidelines for Federal Agencies; E.O. 9397 (SSN); and AFI 91-204, *Safety Investigations and Reports*. System of Records Notice F044 AF SG R applies.

## **SUMMARY OF CHANGES**

This interim change incorporates specific policy, instruction, and guidance on radiation safety programs associated with current nuclear weapons maintenance operations, continental United

States (CONUS) legacy maintenance operations, other related nuclear weapons operations and the management of other 91(b) material. Intrinsic radiation safety (INRAD) and the management of mixed waste have been addressed. This change updates organizational changes that have occurred since initial publication. Organizational office symbols are updated.

Unit designation changes:

“Air Force Medical Operations Agency (AFMOA)” has been updated to “Air Force Medical Support Agency (AFMSA)” and “SGZR” has been updated to “SG3PB.”

“Air Force Institute of Environment, Safety, Occupational Health and Risk Analysis (AFIERA)” has been updated to “United States Air Force School of Aerospace Medicine (USAFSAM).”

“Air Force Safety Agency (AFSA)” has been updated to “Air Force Safety Center (AFSC).”

“Air Force Radioactive Material Recovery and Recycling Office” has been updated to “Air Force Radioactive Recycling and Disposal (AFRRAD) Office.”

“Radiation Protection Division” has been updated to “Radiation Programs,” of which the Radioisotope Committee Secretariat (RICS) is a function.

**(OFFUTTAFB)** This document has undergone extensive revision and must be read in its entirety.

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## Chapter 1

### RESPONSIBILITIES

#### **1.1. Deputy Assistant Secretary of the Air Force, Environment, Safety and Occupational Health, SAF/IEE**

1.1.1. Appoints a voting representative and alternate to the US Air Force Radioisotope Committee (RIC).

1.1.2. Provides guidance, direction, and oversight on all matters pertaining to the formulation, review, and execution of Environment, Safety, and Occupational Health (ESOH) policies, plans, programs and budgets.

#### **1.2. Assistant Secretary of the Air Force for Acquisition, SAF/AQ**

1.2.1. Appoints a voting representative and alternate to the RIC.

1.2.2. Ensures adequate acquisition procedures exist governing the life-cycle management of radioactive material brought into the Air Force inventory, and that these procedures are in accordance with applicable Air Force Instructions or other Federal Regulations (see [paragraph 1.17](#)).

#### **1.3. Surgeon General, USAF/SG**

1.3.1. Establishes Air Force policy for controlling ionizing radiation hazards and sets limits for exposure to ionizing radiation.

1.3.2. Maintains the RIC, under the Assistant Surgeon General, Health Care Operations, AF/SGO, to provide oversight of Air Force use of radioactive materials that are under purview of this instruction.

1.3.3. Provides authority to and directs the USAF Radioisotope Committee to take enforcement action against a permittee who fails to comply with this instruction, a permit or Federal regulations.

1.3.4. Provides required resources for AFMOA/SGPR to protect the interests of the AF Master Materials License (MML) and remain in compliance with applicable NRC regulations, directives and policy guides.

#### **1.4. Deputy Chief of Staff for Air, Space & Information Operations, Plans & Requirements, USAF/ A3/5**

1.4.1. Appoints a voting representative and alternate to the RIC.

1.4.2. Coordinates planned uses of radioactive materials with the RIC.

#### **1.5. Deputy Chief of Staff for Logistics, Installations, and Mission Support, USAF/A4/7**

1.5.1. Appoints voting representatives and alternates to represent logistics, maintenance, civil engineering, environmental issues and security forces functions to the RIC.

1.5.2. Coordinates on logistics, maintenance, civil engineering, and security policies dealing with radioactive materials covered by this instruction.

1.5.3. Provides guidance to AFMC on the management of items containing radioactive material.

1.5.4. Maintains a USAF Radioactive Waste Site Registry.

## **1.6. Assistant Surgeon General, Health Care Operations, AF/SGO**

1.6.1. Establishes the RIC Secretariat as the Radiation Protection Division of the Air Force Medical Operations Agency (AFMOA) to work on behalf of the RIC in providing functional oversight of Air Force use of radioactive materials that are under purview of this instruction.

1.6.2. Chairs or delegates a chair to the RIC. Authorizes the Director of the RIC Secretariat (AFMOA/SGPR Chief) to act in the Chairperson's absence.

1.6.3. Appoints a voting representative and alternate from the Radiation Protection Division of AFMOA (AFMOA/SGPR) to the RIC.

1.6.4. Appoints a voting representative and alternate from the Bioenvironmental Engineering Division of AFMOA (AFMOA/SGPB) to the RIC.

1.6.5. Appoints consultants in nuclear medicine or medical physics as primary and alternate voting representatives to the RIC.

1.6.6. Appoints consultants in operational health physics as primary and alternate voting representatives to the RIC.

## **1.7. The Air Force Inspection Agency, Medical Operations Directorate, AFIA/SG**

1.7.1. Appoints a voting representative to the RIC. Resources and prioritizes inspections according to this instruction and the directions of the RICS.

1.7.2. Maintains a staff qualified health physicist (or Bioenvironmental Engineering (BE) equivalent) trained by the NRC to conduct permit inspections.

1.7.3. Conducts inspections to assess permittee compliance with the terms and conditions of their permit authorizing the use and possession of radioactive materials (see [Attachment 13](#) for Inspection Policy).

1.7.4. Distributes all inspection schedules and reports concerning permit compliance according to AFI 90-201, *Inspector General Activities*, to AFMSA/SG3PB or AFSC/SEW as appropriate.

1.7.5. Sends a copy of all final inspection reports dealing with NRC regulated materials to the US Nuclear Regulatory Commission, Region IV.

1.7.6. Provides the RIC with quarterly and annual summaries of the status of permit compliance inspections, results of completed inspections and trends in violations.

1.7.7. Consults with AFMOA/SGPR on permit inspection policies and methods. Notifies them immediately when a NRC Severity Level I-III violation is suspected.

## **1.8. HQ USAF/SE directs HQ AFSC/SEW to:**

1.8.1. Regulate 91(b) material (acquired from DOE for DOD use in weapons, power production, and other military-unique applications per 41 U.S.C. Ch. 23 Div. A).

1.8.2. Issue permits to CONUS installations for the possession, use, characterization, and remediation of residual 91(b) material from past nuclear weapon accidents, incidents and maintenance activities, dismantled/decommissioned reactor 91(b) material still under AF possession. Radioactive material associated with stockpiled nuclear weapons and current maintenance residuals are not subjected to permitting.

1.8.3. Provides oversight of Air Force uses of 91(b) material.

1.8.4. Coordinate with AFMSA/SG3PB on all radiation safety policy and radioactive material controls issues related to nuclear capable units and 91(b) material.

1.8.5. Coordinate with the Air Force Nuclear Weapons Center (AFNWC) on occupational safety and health issues related to INRAD exposures and on 91(b) material wastes generated from nuclear weapon operations.

1.8.6. Appoints a voting member to the RIC to advise on radioactive material control issues relative to 91(a) and 91(b) material within the Air Force.

#### **1.9. Director of Civil Law, Air Force Legal Operations Agency, AFLOA/JAC**

1.9.1. Appoints a voting representative and alternate to the RIC.

1.9.2. Coordinates on legal issues about radioactive materials, including internal and external enforcement matters, and acts as counsel to the RIC.

#### **1.10. Director, Air Force Institute for Operational Health (AFIOH)**

1.10.1. Appoints a voting representative and alternate to the RIC.

1.10.2. Supports MAJCOMs and installations by maintaining and providing National Voluntary Laboratory Accreditation Program (NVLAP) accredited radiation dosimetry services through the Air Force Dosimetry Center, comprehensive radio-analytical capabilities, and health physics consultative services.

1.10.3. Provides to the RIC quarterly and annual summaries of occupational radiation exposure from radioactive material.

1.10.4. Provides technical and on-site health physics support to the RIC and AFSC/SEW as required to prevent, investigate and mitigate human or environmental exposures to all radioactive material not expressly excluded from purview of the AFI.

#### **1.11. US Air Force Radioisotope Committee (the RIC)**

1.11.1. Provides direction of Air Force uses of radioactive materials and grants authority to the RICS to conduct business according to NRC accepted practices, and the conditions of the Master Material License (MML).

1.11.2. Serves as the Air Force single point of contact for the Air Force Master Materials License (MML) issued by the NRC. Similarly, serves as the interface with NRC Agreement States (which will be referred to throughout this AFI as Agreement States).

1.11.3. Establishes policy, through AF/SGO, to receive, possess, use, distribute, store, transport, transfer, and dispose of or otherwise manage radioactive materials per 10 CFR, *Energy*, 49 CFR, *Transportation*, and Air Force MML requirements.



1.11.4. Recommends policies to USAF/SG through AF/SGO for keeping exposure from approved uses of radioactive materials “As Low As Reasonably Achievable” (ALARA) but always below regulatory limits set out in 10 CFR 20, *Standards for Protection Against Radiation*.

1.11.5. Serves as the Air Force single point of contact with the Conference of Radiation Control Program Directors (CRCPD) and CRCPD licensing states.

1.11.6. Directs and adjudicates enforcement actions when such actions are required to protect persons or property, or maintain compliance with permit and MML requirements (see [Attachment 14](#)).

1.11.7. Identifies new or special inspection needs and reports them to AFIA/SG.

1.11.8. Reviews unique actions and permit requests referred by AFMOA/SGPR.

1.11.9. Reviews and advises on special situations involving radioactive materials as requested by the Air Force Secretariat, Air Staff, or Major Commands.

1.11.10. Identifies and invites technical experts, as necessary, to assist the RIC or RIC Secretariat in ensuring regulatory compliance.

1.11.11. Meets whenever necessary, but at least once each calendar quarter. Convenes ad-hoc or emergency meetings to discuss matters requiring timely action.

1.11.12. Publishes and makes available meeting minutes to all stakeholders (e.g. RIC members, MAJCOM Bioenvironmental Engineers, other MAJCOM representatives, other Service points-of-contact, etc.).

1.11.13. Provides final ruling on the interpretation of this instruction, permits and Federal regulations affecting compliance with the AF MML.

1.11.14. Provides final resolution for any allegations concerning the safe and regulatory compliant use of radioactive material in the Air Force (see [Attachment 15](#)).

#### **1.12. USAF Radioisotope Committee Secretariat (AFMOA/SGPR acting for the RIC)**

1.12.1. Manages and controls all RIC correspondence, maintaining copies of the following documents:

1.12.1.1. The Air Force MML,

1.12.1.2. Documentation on RIC actions,

1.12.1.3. Air Force permits and other actions involving Air Force use of radioactive materials, and

1.12.1.4. AFIA/SG reports of radioactive material activities.

1.12.2. Serves as the single point of contact between the RIC and the NRC or Agreement States, and assists, when requested, in any transactions with host countries for OCONUS permitted activities.

1.12.3. Reviews and acts on Air Force permit applications, renewals, amendments and other requests for approval for the possession and/or use radioactive materials under the RIC's authority.

1.12.4. Issues permits for RIC-controlled RAM to Commanders or their equivalents that possess authority (i.e., UCMJ or disciplinary) to enforce this instruction.

1.12.5. Determines whether individuals are qualified by training, education, and experience to use radioactive materials, manage radiation safety programs for use of radioactive materials, or provide audit services for medical permits.

1.12.6. Regulates the remediation of all radioactive waste disposal sites containing radioactive material under the purview of this instruction.

1.12.7. Establishes terms and conditions for acquiring, receiving, storing, distributing, using, transferring, and disposing of radioactive materials under the RIC's authority.

1.12.8. Coordinates with AFSC/SEW on issues involving the licensing of certain radioactive materials (i.e., reactors see AFI 91-109; aerospace and space power see AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*).

1.12.9. Provides permit documentation to AFIA/SG. Notifies AFIA/SG of changes to Federal regulations that may have an effect on inspection practices.

1.12.10. Provides provisional interpretation of this instruction, permits and Federal regulations affecting compliance with the AF MML until a final ruling can be obtained from the RIC.

1.12.11. Conducts pre-permitting visits and personally responds to radioactive materials incidents and mishaps to ensure that permittees are compliant with all rules and regulations. May accompany AFIA/SG or the NRC during inspections.

1.12.12. Carries out RIC decisions whereas the Chief, RICS is the executive agent for all business associated with the MML, provides for the interpretation of pertinent regulations and guides, and sets forth measures to ensure compliance with the NRC.

1.12.13. Implements enforcement actions in accordance with [Attachment 14](#) of this instruction. These may include Notices of Violation, and revocation and termination Orders to protect persons, property, or to maintain AF MML compliance.

1.12.14. Has the authority to temporarily suspend a permittee from any requirement of this instruction provided the exemption does not conflict with NRC policy or Federal regulations.

1.12.15. Has the authority to impose policy or permit requirements more stringent than NRC policy or Federal regulations.

1.12.16. Employs the use of a database to centrally manage records, actions and correspondence associated with permittees and the AF MML, and establishes appropriate levels of access among various stakeholders to this database. Provides database summary information as necessary to authorized organizations to include the RIC, NRC, and AFIA.

### **1.13. Commander, Air Force Materiel Command, AFMC/CC**

1.13.1. Appoints two voting members to the RIC, one from AFMC/SG and one from the AF Radioactive Recycling and Disposal (AFRRAD) Office.

1.13.2. Establishes an Air Force radioactive waste program office to oversee all radioactive and mixed waste disposition activities. This office shall:

1.13.2.1. Provide technical oversight and coordination of all radioactive waste activities to include decommissioning of radiological waste burial sites or contaminated facilities.

1.13.2.2. Program and advocate funding for radioactive waste management.

1.13.2.3. Coordinate radioactive waste disposal among Air Force activities, the DOD Executive Agent, disposal contractors, and disposal site operators, in accordance with [Attachment 9](#).

1.13.2.4. Maintain all records of radioactive waste transferred for disposal in accordance with the guidance at <https://afrims.amc.af.mil/>.

1.13.2.5. Provide instructions to waste generators on how to package and transport radioactive waste for disposal according to 10 CFR 71, *Packaging and Transportation of Radioactive Material*, 49 CFR, *Transportation*, 40 CFR, *Protection of the Environment* (for mixed waste) and disposal site rules.

1.13.2.6. Provide quarterly summaries of radioactive waste disposal, decontamination and decommissioning activities to the RIC or AFSC/SEW as appropriate. Provides the RICS monthly summaries of 10 CFR 31 material received for disposal.

1.13.2.7. Implement billing procedures in accordance with AFI 65-601 V 1, *Budget Guidance and Procedures*, to allow industrially funded activities to plan, program and fund the cost of contracted services for the disposition of the radioactive materials they generate.

1.13.3. Establishes a capability to oversee and coordinate recycling of Air Force radioactive materials where appropriate and cost-effective.

1.13.4. Ensures that all radioactive items, including waste products, such as scrap materials, are identified in a manner required by Title 10, Title 29 or Title 40 CFR. Data for each item will be coordinated with and developed by the appropriate Air Force activity radiation safety focal point.

1.13.5. Conducts activities in compliance with this instruction, permits and Federal regulations. As necessary, coordinate with the RIC on unique conditions requiring variances to the AF MML.

#### **1.14. Installation Commander**

1.14.1. Designates, in writing, an Installation Radiation Safety Officer (RSO).

1.14.2. Enforces compliance with this instruction and NRC General License conditions.

1.14.3. Delegates the authority to the installation RSO to suspend installation operations involving radioactive materials that pose a significant health risk to personnel, are in clear violation of regulations or requirements, or can negatively impact AF operations, materiel, or real estate.

1.14.4. Provides required resources to the installation RSO to maintain compliance with this instruction.

1.14.5. Provides the installation RSO with clearance and access to all activities governed by this instruction.

1.14.6. Prohibits the receipt or transfer of radioactive material (to include radioactive material used in classified operations) without prior coordination and/or approval by the installation RSO.

1.14.7. Ensures the installation RSO is notified of all activities pertaining to the generation and maintenance of radioactive waste or radioactive waste burial sites.

1.14.8. Each commander shall afford the AFIA at all reasonable times opportunity to inspect all radioactive material and the premises and facilities wherein such is used or stored. Each commander shall make available to the AFIA for inspection, upon reasonable notice, records kept by the unit pursuant to federal, DoD and AFIs.

### **1.15. Installation Radiation Safety Officer (RSO)**

The installation radiation safety officer in most instances is the base bioenvironmental engineer, with additional training as a radiation safety officer.

1.15.1. Establishes the overall installation radiation protection program and informs the installation, tenant and subordinate Commanders about radiation health and safety issues and compliant measures to control radiation hazards. **NOTE:** The installation RSO may also serve as a permit RSO.

1.15.2. Assists local, host or tenant organizations requesting to use radioactive materials that require a permit under the AF MML. Supports installation organizations in the application process and serves as a liaison with the RIC Secretariat.

1.15.3. Establishes the installation's program to manage generally licensed radioactive materials and devices possessed by local, host or tenant organizations in accordance with [Attachment 3](#).

1.15.4. Consults with contracting officers for compliance with the conditions of section [1.18](#).

1.15.5. Provides annual briefs and periodic updates concerning use and storage of radioactive materials to the Installation Commander, fire chief, civil engineer and security forces squadron Commander.

1.15.6. Briefs at least annually the Environmental, Safety and Occupational Health Council (ESOHC) or equivalent, on use(s) of radioactive material on the installation. Provides summaries and trends of personnel dosimetry results and surveys to demonstrate exposures are ALARA.

1.15.7. Applies applicable local, state and Federal guidance on handling, staging, storage and disposition of radioactive materials, radioactive wastes and mixed wastes. Coordinates such activities with affected personnel to include but not limited to permit RSOs, the fire chief, environmental coordinators, bioenvironmental engineering, and civil engineering.

1.15.8. Maintains and annually reviews the installation radiation safety instruction. Coordinates changes with affected installation units. Re-certifies substantial changes to the instruction through the Installation Commander or equivalent.

1.15.9. Reviews all work orders prepared for installation-level actions involving potential use, movement, transfer or disposal of radioactive material.

1.15.9.1. **(Added-OFFUTTAFB)** Review plans for new construction or modification of facilities, which involve the use, or storage of radioactive material or radiation-producing devices to ensure the ALARA concept is considered.

1.15.10. Conducts surveys and assessments of locations where radioactive materials are received, used, or stored, or where radioactive wastes are stored, buried, or not otherwise covered by a permit, in accordance with AFI 48-145, *Occupational Health Program*. Documents the following in accordance with 10 CFR 20, *Standards for Protection Against Radiation* (see [Attachment 7](#) for record maintenance requirements):

1.15.10.1. Compliance with personal protective equipment, shielding, training, posting, and personnel dosimetry requirements.

1.15.10.2. Compliance with 10 CFR 20.1301, *Dose Limits for Individual Members of the Public*.

1.15.10.3. Compliance with applicable permits, this instruction, local instructions and Federal regulations.

1.15.10.4. Evaluation of Logistics Readiness Squadron compliance with this instruction, local instructions and Federal regulations on the receipt, shipment and transfer of radioactive material.

1.15.10.5. Provides assistance to the Contracting Squadron Commander in evaluating compliance with this instruction, local instructions and Federal regulations on procurement of radioactive material and contractor use thereof.

1.15.10.6. Ensures radiation survey meters used for determining compliance with AF instructions and Federal regulations are calibrated according to ANSI guidance at intervals not to exceed one year, unless otherwise specified by the permit, AF instructions or Federal regulations. Each radiation survey meter shall be capable of measuring the energies of interest and operationally checked with an appropriate check source prior to and after use. Records of calibration shall be kept as prescribed in [Attachment 7](#). A record of operational checks is not required, but is recommended.

1.15.10.7. Works with civil engineering to ensure appropriate warning signs are posted throughout the installation in accordance with applicable AF instructions and either NRC or OSHA regulations.

1.15.10.8. **(Added-OFFUTTAFB)** Evaluates exposure potential either through direct measurements or calculations based on occupancy factors and compares results to USAF and federal regulations.

1.15.11. Establishes a program to ensure compliance with AFI 48-148, *Ionizing Radiation Protection* and AFI 91-108 as appropriate. Collects and presents metrics according to [paragraph 1.15.6](#). Establishes investigation levels to ensure exposure to personnel is maintained ALARA. Investigational levels should be developed for each occupational group and are intended to identify adverse trends, assess their causes and implement appropriate corrective actions.

1.15.12. Exercises authority granted by the Installation Commander according to [paragraph 1.14.3](#). Reports deviations from this instruction to the unit Commander and, as necessary, AFMSA/SG3PB or AFSC/SEW as appropriate.

1.15.13. (**Added-OFFUTTAFB**) Coordinates with organizations to dispose or transfer items containing radioactive material.

#### **1.16. Installation Staff Judge Advocate (SJA)**

The installation RSO may request the installation SJA to perform legal review(s) of translated copies of host nation laws governing control of radioactive materials used on the installation. The SJA is the legal advisor for claims or potential regulatory violations brought against the installation by Federal agencies or civilian parties.

#### **1.17. System Program Managers, Developmental Systems Managers, and System Support Managers**

The tasks identified in the following subparagraphs are applicable to Program Managers, including Product Group Managers, responsible for development and sustainment of systems and items acquired by the Air Force IAW DoD 5000-series policy, as implemented principally for non-space systems by AFI 63-101, Operations of Capabilities Based Acquisition, and for space systems and items acquired by the Air Force IAW National Security Space Acquisition Policy 03-01.

1.17.1. Ensure that radioactive material is acquired, used, or distributed in the AF inventory within systems only after obtaining the authority of a permit or general license, approval of the RIC, or as otherwise exempted by Federal regulation.

1.17.2. Ensure systems or items being developed or acquired by the Air Force do not contain radium. Ensure items possessed by the Air Force that contain radium are returned to the manufacturer.

1.17.3. Limit the use of radioactive materials where feasible, consistent with Air Force needs. Justification shall be documented for deciding that non-radioactive materials or less hazardous radioactive materials are not feasible. Justification should include an analysis of the disposal costs and life cycle costs (including handling, permitting, storage, shipment and disposal) in any decision to procure items containing radioactive material. Documentation will be maintained by the program office for the duration the material remains in the Air Force inventory.

1.17.4. Ensure environment, safety, and occupational health considerations are integrated into the Systems Engineering process from the earliest stages of system design for systems that will use radioactive material, using the processes described in MIL-STD-882D, *DoD Standard Practice for System Safety*, to identify hazards and manage the risks associated with hazards that cannot be eliminated.

1.17.5. Use the American National Standard Institute (ANSI) and American Society of Testing Materials (ASTM) standards when specifying plated or encapsulated sources that contain radioactive materials.

1.17.6. Ensure that radioactive material in a developed or modified system is identified to testers, operators, and maintainers by specifying its radionuclide, form, and activity. Include the NRC's Sealed Source and Device Registry (SSDR) numbers and a copy of the Department of Transportation (DoT) Special Form Encapsulation certificate (if applicable).

**NOTE:** The SSDR must specify both the plated or encapsulated source of radioactive material, as well as the approved device(s) that can contain it. Ensure that related information

concerning the material's hazards and risks is also identified to testers, operators, and maintainers to facilitate Operational Risk Management by the user.

1.17.7. Ensure testers, operators, and maintainers of developed or modified systems that contain radioactive devices/items receive easily understood written instructions on how to properly acquire, receive, use, store, transfer, transport, distribute and/or dispose of the material. Instructions shall also include reporting requirements for incidents involving these materials.

1.17.8. Ensure any shipment or transfer of radioactive materials for which the program manager (PM) is responsible is coordinated with the installation RSO and in accordance with the Defense Transportation Regulation, Title 49 CFR, *Transportation*, and 10 CFR 71, *Packaging and Transportation of Radioactive Material*. Ensures a copy of a recipient's permit or license has been obtained prior to shipping permitted or licensed radioactive materials to verify authorization for receipt. Ensures a copy of material receipt is immediately obtained after the transfer. The documents should be provided to the installation RSO or permit RSO and kept according to [Attachment 7](#).

1.17.9. Coordinate with user MAJCOM Bioenvironmental Engineering office to include all radiation safety requirements in contracts for operating, changing, or repairing systems that contain radioactive materials.

1.17.10. Ensure that contractors supporting the PM coordinate with the installation RSO prior to transferring radioactive material onto AF installations. Ensure contractors are fully informed (orally and written) of the requirement to obtain an NRC license to use radioactive material in an area of exclusive Federal jurisdiction on an Air Force installation and possess any requisite NRC Form 241, **Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Jurisdiction or Offshore Waters (NRC Reciprocity Form)** (see sections [3.3.3](#) and [3.4.5](#)).

1.17.10.1. Ensure contractors have procedures to use their radioactive material safely and that they are reminded they are solely responsible for the safety and health of their employees.

1.17.10.2. Require contractors to immediately contact the contracting officer and installation RSO whenever use of their radioactive devices/items may impact AF operations, personnel, facilities or real estate.

## **1.18. Chief of the Contracting Office for the Installation**

1.18.1. Ensures that all contracts contain the terms and conditions the installation RSO has determined must be in the contract in order to be in compliance with all applicable statutes, regulations and instructions for managing radioactive materials in the Air Force. This will include the requirement that non-Air Force organizations, including other DOD organizations, DOE organizations, DOE prime contractors, and other contractors that need to use radioactive materials either licensed by the NRC or an Agreement State on the installations, have one of the following:

1.18.1.1. An NRC or Agreement State license. A copy of the NRC Form 241 (**NRC Reciprocity Form or equivalent**) must be an adjunct to the Agreement State license for those areas of exclusive Federal jurisdiction in Agreement States. For those areas of



concurrent or proprietary jurisdiction in an agreement state, then the respective Agreement State license is a valid authorization.

1.18.1.2. A valid US Navy radioactive material permit.

1.18.1.3. Written certification from DOE organizations or DOE prime contractors that they are exempt from NRC license requirements.

1.18.1.4. Written approval from the installation RSO to transfer, transport, or use temporary storage areas for radioactive materials on the installation.

1.18.2. All solicitations for goods or services that use radioactive materials shall contain selection criteria that will be used in making an award. Compliance with these criteria is mandatory and must receive RSO approval of compliance before award approval.

1.18.3. Provides all design reviews and work order requests involving potential use, movement or disposal of radioactive material to the installation RSO for review and approval prior to allowing work to commence on contract. Work requests without prior approval of the installation RSO will be denied.

1.18.4. In coordination with the installation RSO, and in accordance with the terms and conditions of the contract, suspends contractor operations that violate this instruction, a permit or license, or Federal regulations until corrective action is taken.

#### **1.19. Logistics Readiness Squadron Operations Officer**

1.19.1. Prepares and transports radioactive material shipments in accordance with 10 CFR 71, *Packaging and Transportation of Radioactive Material*, 49 CFR, *Transportation*, and Defense Transportation Regulation (DTR) DOD 4500.9-R-Part II, *Cargo Movement*, as applicable, and is otherwise compliant with [1.17.8](#).

1.19.2. Ensures personnel performing transportation operations (e.g. receipt, shipment, packaging) of radioactive material comply with training requirements specified in 49 CFR 172.704 and Defense Transportation Regulation (DTR) DOD 4500.9-R-Part II, *Cargo Movement*.

1.19.3. Shall establish procedures, with the installation RSO, for the safe movement of radioactive material within or on an AF installation.

1.19.3.1. **(Added-OFFUTTAFB)** Ensures Logistics Flight contacts installation Radiation Safety Officer (RSO) prior to shipping radioactive material so proper contamination surveys may be accomplished IAW Department of Transportation (DOT) or International Air Transport Association (IATA) requirements.

1.19.4. Shall not transfer any radioactive material to units on the installation without prior coordination with the installation or affected permit RSO. Permitted radioactive material will not be transferred to any organizations without an up-to-date permit, a permit RSO, or without the proper identification of radionuclides/quantities of material/devices as authorized on the permit.

1.19.5. Develops and implements procedures to prevent the inadvertent transfer of radioactive material/items of supply containing radioactive material/or any item of suspect through the Defense Reutilization Management Office (DRMO) system. Establishes procedures to notify the installation RSO in the event of an incident(s) or the need to perform



radiological survey(s) of material that has been identified by DRMO as potentially containing radioactive and/or components.

1.19.6. **(Added-OFFUTTAFB)** Maintain an approved temporary storage area for RAM and radioisotope-containing commodities.

## **1.20. Base Civil Engineer**

1.20.1. Immediately notifies the installation RSO of damage (e.g. fire, natural disaster, etc.) to buildings or sites storing and/or containing radioactive material. This includes any incident or event where buildings or sites containing and/or storing radioactive material are potentially in danger and/or risk because of their close proximity to the incident.

1.20.2. Ensures disaster emergency response plans include procedures for the theft, loss, sabotage or release of radioactive material. The installation RSO shall be included in the development and exercise of all emergency response plans.

1.20.3. Complies with the instructions provided by the permit RSO for incident(s) and/or mishaps involving radionuclide quantities of concern as defined by the NRC (see [Attachment 8](#)).

1.20.4. Provides AFMOA/SGPR a list annually of all radioluminescent exit signs on the installation in accordance with [3.2.1.2.1](#).

1.20.5. **(Added-OFFUTTAFB)** Ensure the installation RSO, and other RSOs with a vested interest, review plans for modification of facilities, which involve the use of radioactive material or radiation-producing devices.

1.20.6. **(Added-OFFUTTAFB)** Shall make certain the 55 CES Construction Management Office ensures the installation RSO has coordinated on the statement of work for all construction and services contracts potentially involving the use of RAM and/or x-ray equipment. Ensure contractors using RAM on Air Force installations have installation RSO approval prior to bringing RAM or radiation-producing devices onto Air Force controlled property. The contractor shall contact the installation RSO at least 30 days prior to the intended use; so adequate time is provided to ensure proper licensing or permitting.

## **1.21. Chief, Security Forces**

1.21.1. Immediately notifies the installation RSO of suspected, attempted or actual theft or sabotage of radioactive material, to include supply items containing radioactive material. This includes any situation where the potential for collateral damage exists due to threats in near proximity to radioactive material.

1.21.2. Complies with the instructions of the permit RSO for special conditions associated with emergency response to incidents involving radionuclide quantities of concern as defined by the NRC ([Attachment 8](#)).

## **1.22. Antiterrorism/Force Protection Officer Chief,**

Includes the installation RSO on the Force Protection Working Group (FPWG) or equivalent.

## **1.23. Permittees/Commanders**

The Commander, civilian equivalent or designated representative of an AF organization that

acquires, receives, uses, stores, transfers, transports, distributes and/or disposes of radioactive material covered by this instruction.

1.23.1. Coordinate with the installation RSO prior to receiving, possessing, using, distributing, storing, transporting, transferring or disposing of any radioactive material, or commodity containing radioactive material.

1.23.2. Coordinate with the installation RSO to apply for a USAF Radioactive Material Permit from AFMOA/SGPR in accordance with Section 3.4 or Section 3.9 unless the material is otherwise excluded by this instruction.

1.23.3. Ensure compliance with the provisions of 10 CFR 19, *Notices Instructions and Reports to Workers; Inspection and Investigations*, 10 CFR 20, *Standards for Protection Against Radiation*, and 10 CFR 30, *Rules of General Applicability to Domestic Licensing of By-Product Material*. **NOTE:** All incident reports required by those parts must be forwarded to AFMOA/SGPR.

1.23.4. Ensure compliance with this Air Force instruction, and other applicable instructions, permit conditions and representations in permit applications; or applicable NRC General License conditions.

1.23.5. Provide required resources for the permit RSO to maintain compliance with this instruction.

1.23.6. Provide the permit and installation RSO clearance and access to all activities covered by this instruction.

1.23.7. Provide authority to the permit RSO to request amendments to Medical and Broad Scope permits (*per 10 CFR 33*).

1.23.8. Delegate the authority to the permit RSO to suspend operations involving radioactive materials that pose a significant health risk to personnel, are in clear violation of regulations or requirements, or can negatively impact AF operations, materiel, or real estate.

1.23.9. Ensure applicable responsibilities as outlined in **Chapter 3** are accomplished.

1.23.10. Coordinate all contact with the NRC through the RIC with the following exceptions:

1.23.10.1. Actions conducted under the provisions of 10 CFR 19, *Notices, Instructions and Reports to Workers: Inspection and Investigations*, and NRC Form 3, **Notice to Employees** (see **Attachment 6** and **Attachment 15**).

1.23.10.2. Communication initiated by the installation IG or AFIA/SG.

1.23.10.3. Communication initiated by the NRC.

1.23.10.4. Contact to verify a contractor's NRC Form 241, **NRC Reciprocity Form**.

1.23.11. Ensures an annual internal audit is completed, and for medical permits, ensures that a military or civilian medical physics consultant approved by AFMOA/SGPR does an on-site review every 2 years.

1.23.12. Executes the following administrative requirements:

1.23.12.1. Sign template-permit application forms, NRC Form 313, **Application for Material License**, and NRC Form 314, **Certificate of Disposition of Materials**;

1.23.12.2. Except as noted in **1.23.7**, sign amendment requests for permits;

1.23.12.3. Appoint an individual, in writing, as the Permit Radiation Safety Officer for approval by AFMOA/SGPR. For Template Permits, this requirement is satisfied by signing page two of the Request for Template Permit Action form (AFMOA web site, [https://kx.afms.mil/rad\\_prot/](https://kx.afms.mil/rad_prot/));

1.23.12.4. Approve the charter, membership and Chairperson of a Radiation Safety Committee (RSC) when required.

1.23.13. **(Added-OFFUTTAFB)** Ensures that an ALARA training program is in place, and such training occurs annually.

1.23.14. **(Added-OFFUTTAFB)** Ensures compliance with generally licensed radioactive material requirements IAW AFI 40-201, paragraph 1.15.3.

1.23.14.1. **(Added-OFFUTTAFB)** Coordinate with installation RSO to ensure generally licensed inventory is updated annually.

1.23.14.2. **(Added-OFFUTTAFB)** Coordinate generally licensed radioactive material transfer and disposal through installation RSO and AF Radioisotope Committee, prior to Nuclear Regulatory Commission (NRC) notification.

**1.24. Chairperson of the Permit Radiation Safety Committee (RSC).** Some permit types require the establishment of an RSC, such as medical permits IAW 10 CFR 35, and Type A broad scope permits IAW 10 CFR 33.13. The Chairperson of the RSC is either the Commander or Commander's designated representative, responsible for the permit, and is usually a senior field grade Commander within the permittee's organization. The permit RSO is prohibited from acting as the Chairperson.

1.24.1. Ensures membership is consistent with the scope of permitted activities and regulatory requirements. At a minimum, it should consist of representatives using permitted material and the installation RSO.

1.24.2. Ensures the RSC meets as often as required by the permit or this instruction and at least quarterly to assure the radiation safety program is operating in compliance with its permit, established procedures, and regulations. A quorum consisting of the Chairperson (or designated representative), the permit or alternate RSO, installation or alternate RSO and at least half of the RSC membership must be present for a meeting.

1.24.3. Invites Commanders whose resources and/or direct activities influence successful outcomes of permitted activities. Also invite ancillary personnel (e.g. safety, housekeeping, infection control, maintenance, security forces, etc.) as topics warrant.

1.24.4. Generates minutes of the meeting including, but not limited to:

1.24.4.1. The date of the meeting;

1.24.4.2. Members present and absent;

1.24.4.3. A summary of deliberations and discussions, including the numerical results of all votes;

1.24.4.4. Recommended actions, including identifying the Office of Primary Responsibility (OPR) and whether the action is open or closed;

1.24.4.5. Approvals granted for individuals, protocols, or other actions, and a copy of the credentials or other documents used as the basis for the approvals;

1.24.4.6. Deviations from or violations of this instruction, the permit or Federal regulations;

1.24.4.7. Changes to permit conditions and inspection results; and

1.24.4.8. ALARA program reviews including trend analyses over time and self-inspection results.

1.24.5. Ensures AFMOA/SGPR, all permittees and RSC members receive a copy of meeting minutes signed by the RSC Chair no later than 45 days after a meeting.

1.24.6. Retains meeting minutes until permit termination.

### **1.25. Permit Radiation Safety Committee (RSC)**

1.25.1. Must familiarize themselves with this instruction, the permit, Federal regulations, and local regulations for using radioactive materials.

1.25.2. Reviews the training and experience of nominated authorized users, permit radiation safety officers and recommend approval/disapproval to AFMOA/SGPR.

1.25.2.1. When local approval of physicians as medical users is authorized, as under a broad scope permit, the RSC may approve such users provided they have met the following requirements:

1.25.2.1.1. A current medical license;

1.25.2.1.2. Board certification, or training and experience, described in 10 CFR 35, *Medical Use of Byproduct Material*;

1.25.2.1.3. Intent to be an active participant in the facility's medical use program.

1.25.2.2. The RSC will periodically review authorized users to verify that all are still active in the programs for which they have been approved.

1.25.3. Reviews and approves or denies requests to use permitted radioactive materials. Approved uses must comply with this instruction, the permit and Federal regulations.

1.25.4. With the advice and consent of the Chairperson of the RSC and permit RSO, review and approve or deny minor changes in radiation safety rules in accordance with 10 CFR 35.26, *Radiation Protection Program Changes*.

1.25.5. Establishes specific requirements for special proposed uses of radioactive materials (e.g. bioassays, physical examinations of users, and special survey methods).

1.25.6. Establishes investigation levels for individual occupational radiation exposures and recommend ways to maintain individual and collective doses ALARA.

1.25.7. Annually, reviews the permit RSO's summary report of the entire radiation safety program to determine whether activities, in compliance with this instruction, the permit and Federal regulations and ensure exposures, are ALARA.

1.25.7.1. Investigates all areas of non-compliance, terms and conditions that may or already have negatively affected the health/safety of personnel and/or property. Institutes sanctions as necessary to effect corrective actions.

1.25.7.2. Reviews AFIA/SG, self-inspection, and monitoring results. Implements actions to correct safety issues or violations and evaluate effectiveness of corrective actions and corrective non-ALARA exposure trends.

1.25.8. Reviews and approves or denies research protocols using radioactive materials based on safe and approved uses of radioactive material in accordance with this instruction, the permit and Federal regulations.

1.25.9. Disseminates information to the staff that helps ensure permitted activities are performed safely and in compliance with regulations.

#### **1.26. Permit Radiation Safety Officer (RSO)**

1.26.1. Coordinates with the permittee on requests for a new permit, amendments to an existing permit or termination of a permit.

1.26.2. Ensures compliance with the provisions of 10 CFR 19, *Notices Instructions and Reports to Workers; Inspection and Investigations*, 10 CFR 20, *Standards for Protection Against Radiation*, and 10 CFR 30, *Rules of General Applicability to Domestic Licensing of By-Product Material*. **NOTE:** All incident reports required by those parts must be made to AFMOA/SGPR.

1.26.3. Ensures compliance with this Air Force instruction, and other applicable instructions, permit conditions and representations in permit applications.

1.26.4. Informs the permittee, supervisors, workers and installation RSO when procedures are not in compliance.

1.26.5. Ensures applicable responsibilities as outlined in **Chapter 3** are accomplished.

1.26.6. Assists the permittee and installation RSO to determine, report, promptly investigate and correct:

1.26.6.1. The causes, severity, and results of mishaps or incidents.

1.26.6.2. Non-compliance or other variation(s) from approved radiation safety requirements.

1.26.7. Creates, in sequential binders or files, the permittee's written policy and procedures for implementing requirements of the permit, this instruction and applicable Federal regulations. At a minimum, files shall include procedures specified in the applicable Nuclear Regulatory Commission report (NUREG)-1556 volume for the permit type (see **Attachment 1**). All permitted activities should have policy and procedures for conducting and documenting:

1. Communications with AFMOA/SGPR, including mandatory reporting;
2. Authorizing the procurement of radioactive material;
3. Receiving and opening packages of radioactive materials;
4. Storing radioactive materials;

5. Conducting an inventory of radioactive materials;
6. Emergency response plans for the loss of control of radioactive material and updated emergency response numbers;
7. Safe use of radioactive material.
8. Conducting periodic radiation surveys as required by permit, regulation, and with 10 CFR 20.301, *Dose Limits for Individual Members of the Public*;
9. Calibrating and checking of survey instruments and other safety equipment;
10. Disposing of radioactive material;
11. Documenting financial assurance, if required (see **Attachment 4**) and records of decommissioning of locations where radioactive material was previously used or stored;
12. Training of personnel who work in, or frequent radioactive material use and storage areas;
13. Responding to all findings from AFIA/SG or NRC.

1.26.8. Ensures maintenance of records and reports required by NRC regulations and Air Force Instructions that apply to each permit, to include the permit and permit application, amendments, and correspondence related to the permit.

1.26.9. Annually briefs the permittee and installation RSO on the permit radiation safety program, including the program's regulatory compliance and that exposures are ALARA. Documents the annual brief with a memo or Staff Summary Sheet signed by the permittee and maintained with permit records.

1.26.10. Ensures annual training is conducted in accordance with 10 CFR 19.12, and commensurate with the permit level of radiation risk. Implementation should follow guidance in NRC NUREG 1556-series for the applicable permit type (see **Attachment 1** and AFI 48-145, *Occupational Health Program*, section 3.3 for additional information).

1.26.10.1. (**Added-OFFUTTAFB**) Conducts annual ALARA training and reviews operating and emergency response procedures with applicable permit authorized users.

1.26.11. Assists the RSC (if applicable) in understanding the responsibilities of discharging their duties, and at a minimum provide the following information and documents in meeting minutes:

1.26.11.1. A summary report of the occupational radiation exposure records of all workers. Investigates individuals or groups of individuals with higher than expected exposure. Establishes metrics to compare trends over time.

1.26.11.2. A summary of all incidents, mishaps and violations involving radioactive materials to ensure the root cause was properly identified and appropriate corrective action(s) was taken.

1.26.11.3. A summary of amendments or changes to the permit, this instruction, AF policies and Federal regulations affecting the program.

1.26.12. Coordinates with the installation RSO on operations affecting the installation radiation safety program, such as changes in source-use locations or method of disposal, and approves/disapproves actions under his/her jurisdiction.

1.26.13. Ensures radiation survey meters used for determining compliance with AF instructions and Federal regulations are calibrated according to ANSI guidance at intervals not to exceed one year, unless otherwise specified by the permit, AF instructions or Federal regulations. Each radiation survey meter shall be capable of measuring the energies of interest and operationally checked with an appropriate check source prior to and after use. Records of calibration shall be kept as prescribed in [Attachment 7](#). A record of operational checks is not required but recommended.

1.26.14. Ensures authorized users performing transportation functions (e.g. receipt, shipment, packaging) of radioactive material comply with the training requirements specified in 49 CFR 172.704 and Defense Transportation Regulation (DTR) DOD 4500.9-R-Part II, *Cargo Movement*.

1.26.15. Exercises authority granted by the permittee to request permit amendments for Broad-scope and Medical Permits.

1.26.16. Exercises authority granted by the Permittee according to [paragraph 1.23.8](#). Reports deviations from this instruction to the unit Commander and, as necessary, to AFMOA/SGPR.

1.26.17. **(Added-OFFUTTAFB)** Routinely inventory all areas where radioactive materials or radiation-producing devices are used or stored to ensure no unexpected changes occur, and to ensure they remain in accordance with requirements of USAF Radioactive Material Permits and Air Force directives. Inventories should be documented in accordance with the permit and countersigned by the installation RSO.

## 1.27. Workers

Personnel using radioactive materials shall comply with the permit authorizing the materials use, this instruction, local instructions and Federal regulations. They will:

1.27.1. Comply with directions of the installation and permit RSO.

1.27.2. Immediately report conditions that pose a significant health risk to personnel, are in clear violation of regulations or requirements, or can negatively impact AF operations, materiel, or real estate to either the installation or permit RSO.

1.27.2.1. **(Added-OFFUTTAFB)** Immediately notify the unit or permit RSO and immediate supervisor whenever a suspected overexposure or incident occurs.

1.27.3. Become familiar with NRC Form 3, **Notice to Employees**.

1.27.4. Perform all duties to keep radiation exposures ALARA.

1.27.5. Not override engineering controls, modify personal protective equipment or tamper with radiation dosimeters or purposely expose radiation dosimeters to radiation or radioactive material.



## Chapter 2

### REGULATORY AUTHORITY FOR RADIOACTIVE MATERIALS

#### 2.1. NRC Regulatory Authority

The Atomic Energy Act (AEA) of 1954, as amended (including the Energy Policy Act of 2005), and the Energy Reorganization Act of 1974 (Public Law 93-438) grants the NRC the authority to regulate by-product, source, and special nuclear material. This authority does not extend to material described in section 91(a) and 91(b) of the AEA.

2.1.1. The NRC regulatory authority extends to the United States, its possessions and territories, and Puerto Rico. For regulations issued and enforced by the NRC, see Title 10, *Code of Federal Regulations*, Chapter 1, Parts 1 through 199.

2.1.2. All Federal agencies are subject to compliance with the NRC.

2.1.3. The NRC maintains regulatory authority over Federal Agency licensees regardless of location within the United States.

#### 2.2. Air Force Regulatory Authority

2.2.1. Authority for Air Force receipt, storage, internal distribution, use, transfer, and disposal of byproduct, source, and limited quantities of special nuclear material is granted through a Master Materials License issued to the Air Force by the NRC. This instruction prescribes requirements for Air Force compliance with the Master Materials License.

2.2.2. Authority for Air Force production, receipt, storage, distribution, use, transfer, and disposal by Air Force organizations of Naturally Occurring or Accelerator Produced Radioactive Material (NARM) that is excluded from the definition of byproduct material is also covered under this instruction.

2.2.3. The Air Force also maintains authority through this instruction over 1) the use of materials identified above by non-Air Force organizations on Air Force installations, and 2) material used at AF installations outside NRC jurisdiction.

2.2.4. Authority for Air Force receipt, use, storage, distribution and disposal of 91(a) and 91(b) material is covered under AFI 91-108, AFI 91-109, and AFI 91-110, *Nuclear Safety Review and Launch Approval for Space or Missile Use of Radioactive Material and Nuclear Systems*.

#### 2.3. Resource Conservation and Recovery Act (RCRA)

RCRA authorized EPA to develop and enforce regulations governing the cradle to grave management of hazardous waste. These regulations are found in Title 40 Code of Federal Regulation. Mixed waste is hazardous waste that is also a radioactive material. As such, mixed waste is subject to dual regulation under EPA and NRC rules.

2.3.1. Solid low level radioactive wastes (LLRW) include quantities of byproduct, source and special nuclear material. They also may contain Naturally Occurring or Accelerator Produced Radioactive Material (NARM), and they may fall within the definition of hazardous wastes as set out in Title 40 Code of Federal Regulations, [Chapter 1](#),



Environmental Protection Agency, Part 261, Identification and Listing of Hazardous Waste (40 CFR 261).

2.3.2. Wastes that contain both AEA-regulated radioactive materials and hazardous wastes (as defined by 40 CFR) are termed mixed waste.

2.3.2.1. The NRC regulates the byproduct, source, and special nuclear material constituents.

2.3.2.2. EPA regulates the hazardous chemical and non-NRC regulated constituents.

2.3.2.3. Neither agency has exclusive jurisdiction over mixed waste under current Federal law<sup>1</sup>.

2.3.2.4. Generators of mixed waste must meet both NRC and EPA rules unless exempted by those rules. Refer to 40 CFR 261 and 266, subpart N, AFD 32-70, *Environmental Quality*; AFI 10-2501, *Full Spectrum Threat Response (FSTR) Planning And Operations*; AFI 32-7020, *The Environmental Restoration Program*, AFI 32-7042, *Solid and Hazardous Waste Compliance*; AFD 48-1, *Aerospace Medicine*, and AFD 32-70, *Environmental Quality*, for guidance on compliance with EPA hazardous materials regulations.

## 2.4. Clean Air Act

This act gives the EPA authority over non-NRC regulated radionuclide emissions from Federal facilities. For applicable regulations, see 40 CFR 61, Subpart I, *National Emission Standards for Radionuclide Emissions From Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities Not Covered by Subpart H*. NRC regulates air emissions from NRC licensed Federal facilities in accordance with 10 CFR 20.1101(d). Organizations that generate emissions must comply with both NRC and EPA rules. For guidance on complying with EPA air emission standards, refer to AFD 32-70, *Environmental Quality*, and AFI 32-7040, *Air Quality Compliance*.

## 2.5. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Section 103 of CERCLA requires notification of the National Response Center immediately at 1-800-424-8802 in the event a release of greater than the “reportable quantity” of a hazardous substance is released to the environment. A list of applicable reportable quantities for radionuclides can be found in 40 CFR 302.4, Appendix B- *Radionuclides*.

## 2.6. Emergency Planning and Community-Right-To-Know-Act (EPCRA)

EPCRA requires that whenever a “reportable quantity” of a CERCLA hazardous substance leaves installation boundaries, the State Emergency Response Commission (SERC) and Local Emergency Planning Commission (LEPC) must be notified immediately (see 40 CFR 355, *Emergency Planning and Notification*). Note that EPCRA is not, by its terms, applicable to Federal facilities. The AF complies with EPCRA on a voluntary basis, as directed by E.O. 13,148 (April 26, 2000).

## 2.7. Transportation of Hazardous Material

Department of Transportation (DOT) regulations in 49 CFR, *Transportation* specify

requirements for marking, labeling, shipping documents, containers, and other requirements when shipping or transporting hazardous materials, including radioactive materials. 49 CFR 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials, Communications, Emergency Response, and Training Requirements*, and 49 CFR 173, *Shippers – General Requirements for Shipments and Packagings*, cover the majority of requirements related to radioactive material transport.

## Chapter 3

### PROGRAM ELEMENTS

#### 3.1. Prohibitions and Special Requirements for Accepting or Using Radioactive Materials

3.1.1. Radioactive material shall not be applied to people or clothing. **EXCEPTION:** Radioactive material may be applied as part of an approved medical diagnostic or therapeutic practice.

3.1.2. Radioactive materials shall not be incorporated in any food, beverage, cosmetic, drug, or other commodity, product or item unless specifically licensed by the NRC or permitted by a USAF Radioactive Material Permit authorizing the activity.

3.1.3. Radioactive materials shall not be collected as souvenirs nor incorporated into souvenirs (e.g. 30 millimeter (mm) depleted uranium penetrators, dials and gauges containing radium paint, exit signs containing tritium, etc.).

3.1.4. Radioactive materials shall not be included in displays open to the general public. **EXCEPTIONS:**

3.1.4.1. Materials for displays that teach personnel how to operate a device that functions only if radioactive material is incorporated as a component of the item or device;

3.1.4.2. Materials used to train personnel how to identify an item or substance;

3.1.4.3. Materials authorized by the Air Force Museum (e.g. static display aircraft or other weapon system components having dials, gauges containing radioactive material) in accordance with AFI 84-103, *U.S. Air Force Heritage Program*; or

3.1.4.4. A USAF Radioactive Material Permit authorizes that display.

3.1.4.5. The exceptions apply provided displays are properly marked and labeled and procedures are implemented for control of access to ensure exposures to worker and public are below the limits in 10 CFR 20, *Standards for Protection Against Radiation*, and ALARA.

3.1.5. Targets used on operational ranges shall not contain radioactive materials, including exempted materials (e.g. radium gauges), unless specifically allowed to do so by an Air Force permit. Range authorities shall develop and implement procedures to screen all targets that potentially contain and/or suspect to contain radioactive materials.

3.1.6. The Air Force Master Materials License shall not be cited as authority to receive radioactive materials, or devices that have radioactive materials, into the Air Force supply inventory without first receiving written approval from the RIC. **EXCEPTION:** AFMOA/SGPR, acting for the RIC, may cite the Air Force Master Materials License directly as authority to receive radioactive materials in the Air Force.

3.1.7. AFIA/SG shall not be cited as authority to deviate from the permit, this instruction or Federal regulations. Installation Commanders and permittees will observe the RIC as the final interpretive authority on any AFIA/SG finding.

3.1.8. A USAF Radioactive Material Permit shall not be cited as authority to receive radioactive materials or devices that contain radioactive materials unless specifically authorized on the permit.

3.1.9. Individuals or organizations shall not physically accept custody of non-exempted radioactive material without first obtaining written approval via a permit or other authorization from the RICS or AFSC/SEW.

3.1.10. Individuals or organizations shall first consult and coordinate with AFMOA/SGPR prior to responding to civilian or other non-Air Force entity requests for assistance involving potential Air Force-owned radioactive materials.

3.1.11. Air Force activities outside the United States follow applicable laws and regulations of the host country concerning import, export, control, and disposal of radioactive materials according to the Status of Forces Agreement (or similar document) with the host country. Radiation safety standards and requirements followed by Air Force organizations will be at least as stringent as those within the United States.

3.1.11.1. Permits issued to organizations on installations outside the United States are subject to all applicable host nation restrictions under Status of Forces Agreements.

3.1.11.2. Air Force installations located within the host nation will honor contractor host nation licenses for using radioactive materials in like manner to an NRC or Agreement State License.

### 3.2. Procuring Radioactive Materials

3.2.1. Individuals or organizations:

3.2.1.1. Shall not procure radioactive materials or accept radioactive materials into the Air Force supply inventory without a permit, **EXCEPTION:** See [paragraph 3.3.2](#).

3.2.1.2. Shall not procure facility radioluminescent exit signs (e.g. emergency exit signs containing tritium) and markers without AFMOA/SGPR written approval,

3.2.1.2.1. For all radioluminescent signs placed into use prior to the issuance of this AFI, the base civil engineering office, in cooperation with the local bioenvironmental engineering office, must provide AFMOA/SGPR with an updated annual inventory of signs, to ensure compliance with [Attachment 3](#) and 10 CFR 31.5, *Certain Detecting, Measuring, Gauging or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere*.

3.2.2. For guidelines on procuring items with radioactive materials, follow AFJI 23-504, *Radioactive Commodities in the DOD Supply Systems*, and this instruction.

### 3.3. Requirements for a Permit or License

3.3.1. All Air Force organizations must obtain a radioactive material permit from AFMOA/SGPR prior to receiving, storing, distributing, using, transferring, or disposing of:

3.3.1.1. Specifically licensed byproduct, source, and special nuclear material (SNM), to include those materials covered by the expanded definition of byproduct material in the Energy Policy Act of 2005,

3.3.1.2. Naturally Occurring or Accelerator Produced Radioactive Material (NARM), other than those exempted below.

3.3.2. Air Force organizations do not require a permit for the following radioactive material:

3.3.2.1. Byproduct material specifically exempted in 10 CFR 30, *Rules of General Applicability to Domestic Licensing of Byproduct Material* and **Attachment 2**. **NOTE:** The material must have been originally distributed from the manufacturer as exempt. **NOTE:** Licensed or permitted radioactive material cannot be considered as exempt simply because it has decayed or has been subdivided to a quantity below the exempt quantity or has been diluted to a concentration below the exempt concentration.

3.3.2.2. Source material specifically exempted by 10 CFR 40.13, Unimportant Quantities of Source Material. These exemptions are subject to restrictions outlined in 10 CFR 40.13 for each exemption. **NOTE:** The item must have been originally distributed from the manufacturer as exempt from licensing and meet strict activity and use limitations specified in 10 CFR 40.13. This exemption only applies to the requirements of a permit, and not other requirements specified in 10 CFR 19 and 10 CFR 20 (e.g. radiation dose standards, reporting, disposal).

3.3.2.3. Source material (uranium or thorium) in compliance with 10 CFR 40.22, *Small Quantities of Source Material*. **NOTE:** The source material is generally licensed and AF organizations obtaining source material under 10 CFR 40.22, are not exempt from the requirements of 10 CFR Parts 19, 20, and 21 since the AF possesses source material under a specific license (see 10 CFR 40.22(b)).

3.3.2.4. Generally licensed items, when managed according to 10 CFR 31.3, *Certain Devices and Equipment*, 10 CFR 31.5, *Certain Measuring, Gauging or Controlling Devices*, 10 CFR 31.7, *Luminous Safety Devices for use in Aircraft*, 10 CFR 31.10 *Sr-90 Ice Detection Devices*, or 10 CFR 31.11, *In-Vitro Clinical Testing*. Requirements for possession, transfer and disposal of generally licensed items are summarized in **Attachment 3**. **EXCEPTION:** Devices requiring registration under 10CFR31.5(c)(13), containing at least 10 mCi of cesium-137, 0.10 mCi of strontium-90, 1.0 mCi of cobalt-60, or 1.0 mCi of Americium-241, shall be specifically permitted.

3.3.2.5. Nuclear weapons and certain radioactive parts of weapons systems classed as 91(a) and 91(b) material.

3.3.2.6. Reactor fuel elements and sources inherent to reactor operations, e.g. neutron start-up sources classed as 91(b) material. For approval of storage and use of 91(b) material, see AFI 91-109, *Air Force Nuclear Reactor Program*. **NOTE:** This exemption does not apply to ancillary support sources such as calibration sources that are not classed as 91(b) material.

3.3.2.7. Electron tubes containing rhenium-187, or otherwise specifically exempted under **3.3.2.1**.

3.3.2.8. Other material for which the RICS or AFSC/SEW as appropriate waives the requirement for a permit.

3.3.3. Non-Air Force organizations, except DOE organizations and DOE prime contractors, transferring or using radioactive materials on Air Force installations in areas of exclusive

Federal jurisdiction must have an NRC or Agreement State license with current NRC Form 241, **NRC Reciprocity Form**, authorizing transfer and use on the installation and written approval from the Installation Commander's appointed approval authority, normally the installation RSO.

3.3.4. DOE organizations and DOE prime contractors must certify, in writing, that they are exempt from NRC licensing requirements.

### **3.4. Requesting Permits, Amendments, and Other Authorizations for Radioactive Material Use**

3.4.1. There are two types of Air Force permits: Template and Non-Template.

3.4.1.1. Template permits are issued for devices or applications that pose relatively little radiological risk and employ standardized permit conditions (see [A4.3.1](#) for examples).

3.4.1.2. Non-Template permits are issued to activities that involve significant amounts of sealed or unsealed radioactive materials and pose greater than minimal radiological risk. These permits mandate detailed radiation protection programs and terms and conditions for use. Examples include nuclear medicine clinics, radioactive waste sites, research laboratories or other unique applications where standard permit conditions are not appropriate.

3.4.2. Application for New Permits: Initial applications for both types of permits are prepared and submitted in accordance with [Attachment 4](#). **EXCEPTION:** AFMOA/SGPR should be contacted if an immediate mission critical permit or amendment is required, and that due to time constraints cannot be handled in accordance with procedures given in [Attachment 4](#).

3.4.2.1. For NRC forms, regulatory guides, and guidance on the administrative aspects of permits, contact AFMOA/SGPR, 202-767-4300, [https://www.afms.mil/rad\\_prot/](https://www.afms.mil/rad_prot/). Regulatory guides are also available through the Nuclear Regulatory Commission at <http://www.nrc.gov/reading-rm/doc-collections/>.

3.4.2.2. All applications will require the signature of a permittee and the assignment of a permit RSO by the permittee. The permittee is generally the Commander, or civilian equivalent of the organization responsible for the activity. Refer to [Attachment 5](#) for permit RSO requirements.

3.4.2.3. Activities planning new or unique applications of radioactive materials must contact AFMOA/SGPR as early as possible to decide the scope of the permit and the need for a site visit by the permit action officer or AFIA/SG.

3.4.2.4. Plans for new facilities, in which either large quantities of sealed sources (see [Attachment 8](#) for thresholds) or unsealed radioactive material will be used, must be approved by AFMOA/SGPR prior to construction beginning. Increased controls shall be in place and inspected by AFIA/SG before the permit will be issued.

3.4.2.5. Applications for activities expected to have a significant environmental impact shall be evaluated in accordance with 32 CFR 989, *Environmental Impact Analysis Process (EIAP)*. Construction of a facility or site at which the activity will be conducted shall not begin until the environmental impact report has been submitted with the permit

application, and found acceptable, pursuant to subpart A of 10 CFR 51, *Environmental Protection Regulation for Domestic Licensing*.

3.4.2.6. Pursuant to 10 CFR 30.35, 40.36 or 70.25, *Financial Assurance*, certain applications require a proposed decommissioning funding plan and/or a certification of financial assurance for decommissioning. AFMOA/SGPR should be contacted prior to non-template permit application submission on the need for these plans.

3.4.2.7. Each application to possess radioactive materials in unsealed form, on foils or plated sources, or sealed in glass in excess of the quantities in 10 CFR 30.72, *Schedule C – Quantities of Radioactive Material Requiring Consideration of the Need for an Emergency Plan*, requires either a dose assessment or an emergency plan pursuant to 10 CFR 30.31(i)(1)-(3). AFMOA/SGPR should be contacted to coordinate development of these materials.

3.4.2.8. Applicants desiring to ship, transfer or transport radioactive material greater than a Type A quantity (see 10 CFR 71, *Packaging and Transportation of Radioactive Material*, Appendix A, *Determination of A<sub>1</sub> and A<sub>2</sub>*) must have an NRC approved transportation quality assurance (QA) program in accordance with 10 CFR 71, Subpart H, *Quality Assurance*. This can be accomplished by:

3.4.2.8.1. Submitting an application to AFMOA/SGPR following guidelines in 10 CFR 71, Subpart G, *Operating Controls and Procedures*; 10 CFR 71, Subpart H; and NRC Regulatory Guide 7.10, *Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material*. **NOTE:** Contact AFMOA/SGPR for guidance if not using a commercial NRC approved package.

3.4.2.8.2. Alternately, utilizing a source vendor or other NRC or Agreement State licensee with a NRC approved transportation QA program. **NOTE:** Ensure that the contractor has a license for possessing the material at your facility. Contact AFMOA/SGPR for guidance.

3.4.2.8.3. Applicants desiring to ship or transport radioactive material greater than 100 times the values listed in [Table A8.2](#) of this instruction must also implement additional security measures. **NOTE:** Contact AFMOA/SGPR for guidance.

3.4.3. Renewal Permit Applications: USAF Radioactive Material Permits are issued with expiration dates. Renewal applications must be submitted at least three months, but not greater than six months, prior to the set expiration date to allow time for the application to be reviewed and the new permit issued in a timely manner. Renewal applications for both types of permits are prepared and submitted in accordance with [Attachment 4](#). The existing permit will continue in full force and effect beyond the expiration date, provided a “deemed timely filed” memorandum has been received from AFMSA/SG3PB or AFSC/SEW as appropriate. Failure to renew the permit may result in permit termination.

3.4.4. Permit Amendments: Permittees must apply for a permit amendment when the following conditions are anticipated:

3.4.4.1. Changing permit RSO. Reference [Attachment 5](#) for permit RSO requirements.

3.4.4.2. Changing individual(s) authorized to work with permitted materials. **EXCEPTION:** For medical permit, working under the supervision of another authorized

user as described in 10 CFR 35.27, *Supervision*, or when approval is granted by AFMOA/SGPR.

3.4.4.3. Procuring radioactive materials that are not authorized by the permit (changing radionuclide, chemical or physical form variation, or more than the maximum quantity authorized on the permit. This includes radioactive material exceeding NRC quantities of concern (see [Attachment 8](#)).

3.4.4.4. Changing the use or storage areas of radioactive material listed in the application or listed on the permit.

3.4.4.5. Formulating any changes in the shielding of rooms used for medical radiotherapy, industrial radiography, instrument calibration, irradiation or other radioactive material use that require radiation shielding in walls, floor or ceiling to protect adjacent areas.

3.4.4.6. Using radioactive materials for a clinical procedure allowed by 10 CFR 35, *Medical Use of Byproduct Material*, but not authorized by the existing permit.

3.4.4.7. New permit applications and amendments for the issuance of all types of chemical agent monitors shall be coordinated with the device item manager (77 AESG/TAO).

3.4.4.8. If a change must be initiated prior to permit amendment approval, then the permittee must obtain verbal approval from AFMOA/SGPR, and maintain a record of each minor change until the permit amendment or renewal is granted. Documentation shall include:

3.4.4.8.1. The effective date of the change,

3.4.4.8.2. A copy of old and new radiation safety requirements,

3.4.4.8.3. The reason for the change,

3.4.4.8.4. A summary of radiation safety concerns to be considered before making the change,

3.4.4.8.5. The signature of the RSO, and

3.4.4.8.6. The signatures of the authorized users affected by the change and the Commander or the permit RSC chairperson.

3.4.4.9. Permit amendments are not required for the following:

3.4.4.9.1. Editing radiation safety requirements or procedures for clarity or conformance with local publication formats or updating names, telephone numbers, and addresses;

3.4.4.9.2. Replacing permitted items with identical items,

3.4.4.9.3. Reassigning tasks among employees, unless permit identifies Authorized Users,

3.4.4.9.4. Assigning service contracts for services such as equipment repair or calibration, waste disposal, health physics or bioenvironmental engineering consultants.



3.4.4.10. Permittees must notify AFMSA/SG3PB in writing within 30 calendar days when they change their mailing address or when personnel listed on the permit such as users or RSOs permanently cease their duties or change their names. Radioactive material must be placed in storage if a qualified RSO is not available for greater than 30 days (e.g. deployed, TDY, etc.).

3.4.5. Non-Air Force Organizations Using Radioactive Materials on Air Force Installations: When a civilian organization or other Federal agency desires to bring radioactive material onto or conduct operations using radioactive materials on an Air Force installation, written approval must be obtained from the installation RSO.

3.4.5.1. The non-Air Force organization must send a request to the installation RSO at least 30 calendar days before bringing the materials onto the installation. For contractors, these requirements must be included in the statement of work.

3.4.5.2. Requests must be in writing and include:

3.4.5.2.1. A brief description of the proposed activities,

3.4.5.2.2. A copy of a current NRC or Agreement State license with current NRC Form 241, **NRC Reciprocity Form** for areas of exclusive Federal jurisdiction in Agreement States. For those areas of concurrent or proprietary jurisdiction in an Agreement State, then the respective Agreement State license is a valid authorization. The license must either specifically list the installation or authorize approval for work at temporary job sites anywhere in the United States where the NRC or Agreement State has jurisdiction. **EXCEPTION:** Contractors using generally licensed materials (e.g. certain NITON Lead Paint Analyzers) and DOE or DOE prime contractors operating in accordance with 10 CFR 835 do not require an NRC license or NRC Form 241. Contractors from a Non-Agreement State do not require an NRC license or NRC Form 241 for NARM.

3.4.5.2.3. The name, local address, and telephone number for the responsible local representative and the name, address, and telephone number of the RSO named on their license,

3.4.5.2.4. A copy of the contract clause of the Air Force contract describing work to be performed at the installation and the inclusive dates of the work, and

3.4.5.2.5. A written authorization in the contract that the installation RSO can conduct periodic assessments to ensure contractor personnel are complying with radiation safety practices to prevent exposures to Air Force personnel and avoid contamination of government property. In addition, the contract should specify the installation RSO must have authority to suspend contractor operations believed to be unsafe.

3.4.5.2.6. **(Added-OFFUTTAFB)** A listing of authorized users and any certificates which demonstrates their qualifications.

3.4.5.3. Agreement State licensees using NRC regulated materials in areas of exclusive Federal jurisdiction must provide a copy of the NRC Form 241 approved by either the Air Force installation's or contractor's NRC Region according to 10 CFR 150.20, *Recognition of Agreement State Licenses*. The form must specify the correct locations

and dates of performance of licensed activities. State licensees may not work on Air Force or other installations where exclusive Federal jurisdiction exists for more than 180 calendar days per calendar year without first getting an NRC license.

3.4.5.4. Non-Air Force organizations that do not have an NRC or Agreement State License with current NRC Form 241 and who are not DOE or DOE prime contractors exempted from licensing must contact AFMOA/SGPR for guidance and approval to use radioactive materials on an Air Force installation.

3.4.6. Permittees under new permits must notify AFIA/SG immediately upon first receipt of radioactive material.

### 3.5. Posting Notices to Workers

3.5.1. Applicants and permittees using NRC-licensed radioactive materials and personnel using radioactive materials at overseas locations must post a current NRC Form 3, **Notice to Employees**. Each permittee shall post a supplemental notice regarding the availability of a permit and AF MML documentation according to 10 CFR 19.11, *Posting of Notices to Workers*. See [Attachment 6](#) for the supplemental notice.

3.5.2. Permittees in accordance with section 10 CFR 21, *Reporting of Defects and Non-compliance*, must also post a copy of Section 206 of the Energy Reorganization Act of 1974 and a notice regarding the availability of the regulations and procedures adopted according to 10 CFR 21.6, *Posting Requirements*. See [Attachment 6](#) for Section 206 of the Energy Reorganization Act of 1974.

3.5.3. Post the forms and notices in accordance with 10 CFR 19.11 and 10 CFR 21.6.

### 3.6. Control of Radioactive Material, and Information Concerning Radioactive Material

3.6.1. All non-exempt byproduct, source, special nuclear material, and NARM (i.e., residual 91(b) material from past nuclear weapon accidents, incidents and maintenance activities, dismantled/decommissioned reactor 91(b) material still under AF possession), must be secured from unauthorized removal or access. Materials that are used in unrestricted areas must be under the constant surveillance of an individual authorized under a valid USAF permit or NRC/agreement state license when not in storage. See 10 CFR 20, Subpart I, *Storage and Control of Licensed Material*, for more information.

3.6.2. All permitted and licensed radioactive sources and devices must be inventoried as follows:

3.6.2.1. Permitted radioactive materials or devices shall be inventoried at the frequency specified in the permit.

3.6.2.2. Licensed radioactive material or devices not requiring a permit shall be inventoried in accordance with the applicable CFR, Technical Order or AF Instruction (see [Attachment 3](#)).

3.6.2.3. Unless otherwise specified, inventories of permitted or licensed materials shall be conducted at intervals not to exceed 12 months.

3.6.3. Inventory documentation must be retained in accordance with the applicable CFRs (see [Attachment 7](#)). Documentation must include the following:

- 3.6.3.1. Date of the inventory,
- 3.6.3.2. Model number and serial number of each source if assigned,
- 3.6.3.3. The identity of the radionuclide and quantity (manufacturer date if sealed source),
- 3.6.3.4. The location of each source, and
- 3.6.3.5. The signature of the permit RSO certifying the accuracy of the inventory.
- 3.6.3.6. National Stock Number, if applicable.

3.6.4. Information Security and Increased Controls for Certain Quantities of Radioactive Material: All radioactive material and information about the radioactive material shall be protected from malicious use. Specific requirements are provided in [Attachment 8](#) for the control of information for certain threshold quantities of material. [Attachment 8](#) also details specific requirements on increased controls for radionuclide quantities of concern and for transportation of large quantities of radioactive material.

### 3.7. Transferring Permitted Radioactive Material

3.7.1. Permitted or licensed radioactive material shall only be transferred to:

3.7.1.1. An organization or person authorized to receive the materials under the terms of a USAF or USN permit, NRC license, or Agreement State License.

3.7.1.2. Air Force agencies with written authorization from AFMSA/SG3PB or AFSC/SEW as appropriate

3.7.1.3. DOE and DOE prime contractors who certify, in writing, that they are authorized to receive the materials.

3.7.1.4. Organizations or persons outside the United States under an export license of 10 CFR 110, *Export and Import of Nuclear Equipment and Material*. Permission to transfer USAF radioactive material between the AF and a foreign government requires pre-coordination with the AFMOA/SGPR and is determined on a case-by case basis.

3.7.1.5. Common and contract carriers, freight forwarders, and warehouse workers, for transporting or storing materials subject to 10 CFR 30.13, *Carriers*, 10 CFR 40.12, *Carriers*, and 10 CFR 70.12, *Carriers*. Package, label, and consign materials for shipment according to 10 CFR 71, *Packaging and Transportation of Radioactive Materials*, 49 CFR 173, *Shippers – General Requirements for Shipments and Packaging*.

3.7.2. Permittees shall ensure that any recipient has authority to receive the materials before making the transfer by:

3.7.2.1. Obtaining and filing a copy of the recipient's NRC license, Air Force or Navy permit, or Agreement State license giving authority to receive the materials, or

3.7.2.2. Obtaining and filing a letter from the recipient certifying authority to receive the materials, to include the license or permit number, issuing agency, expiration date, type of materials, form of materials, and the authorized amount.

3.7.2.3. In emergencies, telephonic certification is authorized followed up with a letter or message within 10 days.

3.7.3. Use, when it is required by 10 CFR 40.64, *Reports* or 10 CFR 74.15, *Nuclear Material Transfer Reports*.

3.7.4. When shipping NRC specifically licensed, generally licensed or permitted radioactive materials, verify that the material is received by the ship-to-address and/or the intended destination. Verification of receipt, in writing, by the recipient is the preferred method. If for some reason written verification cannot be accomplished, then telephonic confirmation may be used provided it is documented and includes name, number and title of the person verifying the receipt and date of the telephonic conversation. When receiving materials from another Air Force organization or when requested by a non-Air Force shipper, confirm receipt in writing. For items shipped to and from Distribution Depots, documentation in Defense Logistics Agency's Defense Logistics Management System (DLMS) is acceptable. Transfer (turn-in/shipment and receipt at receiving end) documentation associated with termination of permitted activities must be provided to AFMOA/SGPR to document applicable permit amendments and permit termination requests.

3.7.5. Report transfer of generally licensed material directly to the NRC in accordance with 10 CFR 31.5, *Certain Detecting, Measuring, Gauging or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere* (see [Attachment 3](#) and [Attachment 11](#)).

3.7.6. Coordinate with AFMSA/SG3PB or AFSC/SEW as appropriate for transfer of radioactive material exceeding NRC quantities of concern ([Attachment 8](#)).

3.7.7. Keep records of all transfers according to <https://afrims.amc.af.mil/>, and [Attachment 7](#).

3.7.8. Transfer of all radioactive material from one permit to another does not constitute termination or relieve the permittee from notifying AFMSA/SG3PB or AFSC/SEW as appropriate and providing information on decommissioning. Accordingly, such permits are considered in full force and effect and subject to inspection by AFIA/SG until the conditions of [paragraph 3.11](#) are met.

### 3.8. Transporting Radioactive Material

3.8.1. Air Force activities shipping or transporting radioactive materials must comply with the Defense Transportation Regulation (DTR) DOD 4500.9-R-Part II, *Cargo Movement*, US Department of Transportation (DOT) and US Postal Service (USPS) regulations.

3.8.2. Air Force activities shipping or transporting NRC licensed or permitted radioactive materials must comply with 10 CFR 71, *Packaging and Transportation of Radioactive Material*, and 49 CFR 100 through 199. Generally, most 49 CFR requirements are prescribed in Part 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements* and Part 173, *Shippers – General Requirements for Shipments and Packaging*.

3.8.3. The generating activity must properly identify radioactive material and items containing radioactive materials when sending to the Traffic Management Flight for packaging and shipping. Identification of these items and/or radioactive material shall be in accordance with 49 CFR 172.202 and the following:

3.8.3.1. Radionuclide(s);

3.8.3.2. Description and number of items;

3.8.3.3. Item nomenclature and, if applicable, national stock number (NSN), proper shipping name and UN number;

3.8.3.4. Individual and total activity in units of Becquerel (Bq) with Curies (Ci) in parentheses; and

3.8.3.5. Chemical and physical form (e.g. special form, normal form, etc.).

3.8.4. When shipping between or to overseas locations, compliance with applicable Status of Forces Agreements (SOFA), International Air Transportation Association (IATA) standards and International Atomic Energy Agency (IAEA) Transportation Safety Standards (TS-R-1) is required.

### 3.9. Managing and Remediating Radioactive Waste Sites

3.9.1. Manage and remediate radioactive waste sites according to AFI 32-7020, *The Environmental Restoration Program* and policies established by USAF/A4/7 and [Attachment 9](#) of this instruction.

3.9.2. Radioactive waste site remediation is a complex multi-phase, multi-agency process that is subject to NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*. [Attachment 9](#) outlines the major responsibilities for each agency and provides a chronological sequence of events that should be followed in order to ensure regulatory compliance.

3.9.3. Air Force organizations are not authorized to possess radioactive investigation derived waste or radioactive remediation waste unless authorized by a specific permit.

3.9.4. All suspected radioactive waste sites must be entered into the Air Force Radioactive Waste Site Registry, maintained by AF/A7CV. The registry is a database of all formerly known and/or potentially radioactive waste sites. For reasons of posterity, privatization of land, occupational health, public health and public relations, it is imperative that the Air Force maintain a master log of these sites.

3.9.5. Any Air Force organization, or agency acting on behalf of the Air Force, performing intrusive characterization or site remediation involving radioactive material must have:

3.9.5.1. A NRC or Agreement State radioactive materials license that authorizes site remediation activities, or

3.9.5.2. An Air Force or Navy permit that authorizes site remediation activities; and

3.9.5.3. Experience with site remediation.

3.9.6. Installations may undertake invasive characterization only if they intend to exhume the site. If this is the case, approval of the AFMSA/SG3PB or AFSC/SEW as appropriate is also required.

3.9.6.1. Remediating a site generates radioactive wastes that must be controlled and properly disposed of. Remediating a site may also release waste in quantities that dictate a prompt total exhumation.

3.9.6.2. Prior to instigating intrusive investigation contracts, the base should perform a complete historical site assessment.

3.9.7. Work, and health and safety plans for remediation of radioactive waste burial sites, to include waste disposal procedures, must be coordinated in accordance with [Attachment 9](#) of this instruction. If, during the course of remediation, a site is found to contain radioactive materials which were not anticipated, then work must be temporarily ceased and the IRSO must immediately notify AFMSA/SG3PB or AFSC/SEW as appropriate to determine requirements for resumption of field activities.

3.9.7.1. All plans will be submitted to AFIOH/SDRH, and the Air Force Radioactive and Mixed Waste Office for approval during the project planning stage.

3.9.7.2. Plans for sites containing or suspected to contain only 91(a) or 91(b) materials shall be submitted to the Weapons Safety Division of the Air Force Safety Center (AFSC/SEW).

3.9.7.3. Plans for all other sites shall be submitted to AFMOA/SGPR for review. Those sites containing or potentially containing byproduct, source and special nuclear material will be forwarded by AFMOA/SGPR to the NRC for their review.

3.9.8. Final reports of remediation of all sites containing radioactive material shall be sent to AFMSA/SG3PB or AFSC/SEW as appropriate for archival purposes. The AFRRAD Office will maintain and archive all disposal records and manifests for radioactive waste generated from a remediation.

### 3.10. Managing and Disposal of Radioactive Materials

3.10.1. Installation and permit RSOs jointly prepare requirements for waste management, according to [Attachment 10](#), by considering local conditions such as quantities and types of waste produced, where waste is generated, and the location and configuration of available storage.

3.10.1.1. The base Civil Engineer provides environmental related consultation to generating units, the IRSO, and the AFRRAD Office on the RCRA hazardous waste (HW) requirements of 91(b) mixed wastes as related to the proper identification, handling, segregation, and storage of such wastes.

3.10.1.2. “Add” The base Civil Engineer oversees compliance with installation RCRA permits (if applicable) and/or RCRA requirements for storage, treatment, and disposal of mixed waste per federal, state, and local requirements and AFI 32-7042, *Solid and Hazardous Waste Compliance*, and in coordination with the IRSO and the AFRRAD Office.

3.10.1.2. (OFFUTTAFB) Contact the installation RSO (294-6319) prior to disposing or recycling any radioactive material.

3.10.1.3. “Add” Installation generators will coordinate the disposal of RW and MW with the IRSO, who will in turn, coordinate with the AFRRAD Office. The base Civil Engineer will be consulted as required (if RCRA applicable) to ensure appropriate procedures followed.



3.10.2. A USAF radioactive material permit is required for all radioactive waste storage areas used for permitted or licensed quantities of NRC regulated wastes, to include NARM wastes,

3.10.2.1. Radioactive waste storage from more than one permit at a single location or otherwise co-mingling radioactive waste from more than one permit is prohibited unless specifically authorized by the AFMSA/SG3PB or AFSC/SEW as appropriate. Mixed waste from nuclear munitions maintenance shall not be commingled or stored with waste from a permit issued by the RICS unless approved by AFMSA/SG3PB and AFSC/SEW.

3.10.3. Permittees shall maintain an inventory for and secure all radioactive materials and items containing or contaminated with radioactive materials pending disposal or transfer.

3.10.4. Permittees shall also comply with all other applicable Federal, state, and local regulations and instructions regulating all hazardous and mixed wastes at the site. Coordinate with the base civil engineer to determine local requirements for managing and staging mixed waste.

3.10.5. Radioactive wastes shall be disposed of as soon as practical. Collection or storage of radioactive wastes exceeding one year shall be avoided. Under no conditions shall mixed waste be staged for longer than 90 calendar days unless a RCRA permit authorizing storage for up to 365 days has been secured from EPA through the Base Civil Engineer. Coordinate promptly with the Air Force Radioactive and Mixed Waste Office via the permit RSO and installation RSO.

3.10.6. Dispose of radioactive material using one of the following methods:

3.10.6.1. Transfer to an authorized recipient (see [paragraph 3.7](#)), subject to the restrictions of 10 CFR 20.2001, *General Requirements*;

3.10.6.2. Decay in storage for radioactive material having a physical half-life less than 120 days provided: a) Prior to disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from natural background; b) All radiation labels and markings shall be removed or obliterated; and c) A record of each disposal shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal, in accordance with 10 CFR 35.92(b), *Decay in Storage*;

3.10.6.3. Release to effluents in accordance with 10 CFR 20.1301, *Dose Limits for Individual Members of the Public*, if authorized by AFMOA/SGPR;

3.10.6.4. Release to the sanitary sewer in accordance with 10 CFR 20.2003, *Disposal by Release into Sanitary Sewerage*, and other applicable Federal, state, or local regulations; or

3.10.6.5. Regard and/or characterize C-14 and H-3 as non-radioactive material in accordance with 10 CFR 20.2005, *Disposal of Specific Wastes*.

3.10.7. Disposal by land-burial must be authorized by the Air Force Radioactive and Mixed Waste Office in accordance with **Attachment 10**, to include adherence to 10 CFR 20.2006, *Transfer for Disposal and Manifests*. Do not ship radioactive wastes from an Air Force installation without first acquiring written instructions from this office.

3.10.8. Disposal by sanitary sewer as described in 10 CFR 20.2003 applies only to publicly owned treatment facilities. Installations with their own sewage treatment facility must apply to AFMOA/ SGPR for authorization to dispose of radioactive materials in effluents in accordance with 10 CFR 20.2003. In all cases, the permittee shall coordinate with base civil engineering prior to disposal to ensure compliance with local ordinances, state law and Clean Water Act permits.

3.10.9. Permittees may propose alternative disposal procedures IAW 10 CFR 20.2002, to AFMOA/ SGPR for approval.

3.10.10. Permit or installation RSOs shall maintain disposal records according to 10 CFR 20.2108, *Records of Waste Disposal* as implemented in <https://afrims.amc.af.mil/>, and **Attachment 7**.

3.10.11. Organizations must be specifically permitted/licensed to receive waste containing radioactive material for:

- 3.10.11.1. Treatment prior to disposal;
- 3.10.11.2. Treatment or disposal by incineration;
- 3.10.11.3. Decay in storage;
- 3.10.11.4. Disposal at a land disposal facility licensed under 10 CFR 61; or
- 3.10.11.5. Disposal at a geologic repository under 10 CFR 60 or 63.

### **3.11. Cessation of Operations and Terminating Permits**

3.11.1. If permitted operations cease, the permittee must initiate decommissioning operations within two years of the date when use of the permitted material stops. For permits that are anticipated to be in a no-operations status for an extended period of time (greater than one year) the permittee should request a permit amendment to place the permit in a no-operations status. This also applies to permits in decommissioning status for which decommissioning actions are in abeyance for an extended duration.

3.11.2. An organization shall request termination of their permit within 30 days after appropriate disposal or transfer of all regulated radioactive materials and conclusion of any required decommissioning operations.

3.11.3. If a permit is allowed to expire, the permit authorizations remains in full force and effect for *possession only* of material, but ceases for *use* of the material. Permits will remain in *possession only* status until formally terminated.

3.11.4. If a decommissioning plan is required in accordance with 10 CFR 30.36, *Expiration and Termination of Licenses and Decommissioning of Sites*, it must be submitted to AFMOA/SGPR for approval. Decommissioning plans will be reviewed by both AFMOA/SGPR and the NRC.



3.11.5. Permittees shall execute the AFMOA/SGPR approved decommissioning plan and properly dispose of all radioactive material through the AF Radioactive and Mixed Waste Office.

3.11.6. Permittees shall request an amendment to terminate a permit by submitting:

3.11.6.1. A completed NRC Form 314, **Certificate of Disposition of Materials**;

3.11.6.2. The last inventory and confirmation that this materials was transferred and received by another permittee, or NRC or Agreement State licensee, or shipped to a licensed broker for disposal. **NOTE:** Do not simply send documents showing stock listed items were turned into installation supply. Demonstrate that all possessed materials were either disposed of or transferred properly, and that no permitted materials remain associated with the permit.

3.11.6.3. The final status survey (if a decommissioning plan is required) demonstrating no radioactive materials or residual contamination above limits for unrestricted release as prescribed in NUREG 1575, *Multi-Agency Radiation Survey and Sight Investigation Manual*, NUREG 1757, Vol II, *Consolidated NMSS Decommissioning Guidance, Characterization, Survey and Determination of Radiological Criteria*, and 10 CFR 20.1402, *Radiological Criteria for Unrestricted Use*.

3.11.6.4. For permits possessing only sealed or plated sources, a final leak test demonstrating source integrity is required. For permits possessing only short half-life material meeting the requirements of **3.10.6.2**, a radiation survey report demonstrating no residual radiation levels in use or storage areas are above background is required.

### 3.12. Reporting Radioactive Material Incidents and Mishaps

3.12.1. Follow reporting criteria and time limits in **Attachment 11**. See **Attachment 12** for a general reporting checklist.

3.12.1.1. **(Added-OFFUTTAFB)** Immediately report all radioactive material and incidents involving ionizing radiation to the immediate supervisor, unit and/or permit RSO, owning commander and installation RSO (294-6319). If after-hours, contact the RSO via the Bioenvironmental Engineering on-call phone through the Base Command Post.

3.12.2. The permittee, the permit RSO, and the installation RSO must each ensure that AFMOA/ SGPR receives reports required by **Attachment 11**. Report an incident if you have any reservations about whether reporting is required.

3.12.3. Report incidents initially by telephone (installations outside the United States may report by message) and confirm by telefax or message. Report to:

3.12.3.1. AFMSA/SG3PB, 1400 Key Blvd, Nash Bldg, Suite 400, Arlington, VA 22209-1554; DSN 425-0035 or (703) 588-0035; FAX: DSN 425-5855 or 703-588-5855.

3.12.3.2. To report after normal duty hours, call the Bolling AFB Command Post, DSN 297-4011 or (202) 767-4011. Give your name, organization, DSN and commercial phone numbers. State that you are calling with a "radioactive material incident report" and ask for the AFMSA/SG3PB duty officer.

3.12.3.3. “Add” Inform the Chief of Safety, MAJCOM/SEW and IRSO of any INRAD or 91(b) material mishaps per AFI 91-204, *Safety Investigations and Reports*.

3.12.3.4. “Add” The unit RSO, in conjunction with the unit safety office, will inform HQ AFSC/SEW through Air Force Safety Automated System (<https://sas.kirtland.af.mil/>) of any *abnormal exposures and/or suspected overexposures* to personnel or the public fro

3.12.4. Time limits for reports begin when the event occurs or when it is first discovered. Incidents requiring an immediate report must be forwarded within 3 hours. Include as much of the information outlined in **Attachment 11** and **Attachment 12** as is available, but do not delay reporting if you have not collected all the pertinent information.

3.12.5. AFMOA/SGPR directs follow-on written reports or information needed to comply with NRC regulations.

3.12.6. A copy of all written reports must be forwarded to the installation RSO, installation Commander, MAJCOM bioenvironmental engineer, MAJCOM functional office and AFIA/SG.

3.12.7. The requirements in **3.12.1** through **3.12.6** are separate from the reporting requirements of AFI 10-206, *Operational Reporting*, and AFI 91-204, *Safety Investigations and Reports*. This instruction does not prescribe the reporting requirements of incidents or mishaps involving only nuclear weapons, nuclear weapons parts, reactors and fuel assemblies, and space systems exempted from NRC regulatory authority under Section 91(b) of the AEA.

3.12.8. EPA regulations require reporting releases of radioactive materials characterized as hazardous substances under 40 CFR 302, *Designation, Reportable Quantities, and Notification*. The EPA lists some of the chemical forms of radioisotopes and many of the non-radioactive chemical constituents that may be part of the release with radioisotopes as a result of an industrial process. Report spills of radionuclides or mixed hazardous materials to the environment in accordance with AFI 10-2501, *Full Spectrum Threat Response (FSTR) Planning And Operations*. These reports are separate from the reporting requirements described in this instruction.

3.12.9. The installation RSO must establish procedures, approved by the Installation Commander, for informing the state radiation control director, through the installation public affairs office, of incidents that threaten to cause radiation exposure to members of the general public. State officials require factual notification (subject to security restrictions on classified information) on radiological incidents that could affect members of the general public or the accidental release of radioactive materials to the environment. Report to state officials:

3.12.9.1. An inadvertent rupture of a radioisotope power system containment capsule or a reactor fuel element that results in release of radioactive material outside of the controlled area or to the environment.

3.12.9.2. A loss of control of radioactive material that causes a real or potential hazard to off-installation members of the general public, such as:

3.12.9.2.1. A spill or unplanned release of radioactive material in quantities of concern which would require emergency response by individuals outside the unit or work center.

3.12.9.2.2. The discovery of any detectable levels of radioactive material tracked or transferred off the installation.

3.12.9.2.3. A loss of radioactive material under circumstances which could result in the material leaving the installation.

3.12.9.2.4. Any theft or sabotage of radioactive material.

3.12.10. Safeguard classified information when making reports. Special care shall be taken when reporting and investigating an incident or mishap under AFI 91-204, *Safety Investigations and Reports*, to ensure that reports forwarded to AFMOA/SGPR do not contain classified or sensitive unclassified information. All reports involving radioactive material exceeding NRC quantities of concern shall be handled as sensitive information and be transmitted as directed by AFMOA/SGPR. All information will be properly marked and secured from unauthorized access.

3.12.11. By Federal law, the Air Force must give the NRC certain types of information normally protected from release. When investigating the cause of an incident or mishap and the involvement of persons for reports under this instruction, do not compromise information security.

### **3.13. Response to Radioactive Materials Incidents and Mishaps**

3.13.1. Comply with the requirements in AFI 91-204, *Safety Investigations and Reports*; AFI 41-106, *Medical Readiness Planning and Training*; AFI 10-2501, *Full Spectrum Threat Response (FSTR) Planning And Operations*, and this instruction.

3.13.2. Acceptance of any radioactive material from civilian sources (e.g. scrap yards, private individuals, etc.) is prohibited unless approved by AFMOA/SGPR.

3.13.3. Ensure adequate precautions are taken to prevent possible radiological contamination of personnel or equipment, and to minimize the spread of any contamination that might be present. Protective actions to be considered include:

3.13.3.1. Ensure response personnel use protective equipment such as gloves, respirators or protective clothing when responding to mishaps potentially involving radioactive material.

3.13.3.2. Ensure that appropriate radiation detection equipment is available and personnel know how and when to use it.

3.13.3.3. If radioactive contamination is detected, take action as soon as possible to identify, notify and assess those initial responders or other personnel who might have been contaminated during initial life saving operations.

3.13.3.4. Collect and segregate radioactive material at the incident/mishap site once immediate life saving and incident control actions are complete.

3.13.4. When responding to aircraft incidents, recognize that cargo and/or aircraft components may contain radioactive material. Examples include:

3.13.4.1. Licensed or permitted radioactive materials or items containing licensed or permitted radioactive materials in the cargo.

3.13.4.2. Munitions, ballast and counterweights made of depleted uranium.

3.13.4.3. Magnesium-thorium in airframe and engine parts.

3.13.4.4. Thorium-coated lenses and static elimination sources (Po-210) in target designators.

3.13.4.5. Radioluminescent exit markers, dials, and gauges containing tritium or radium.

3.13.4.6. Americium-241 sources in Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) or SNIPER systems.

3.13.4.7. Strontium-90 In-flight Blade Inspection Systems (IBIS).

3.13.5. Electron tubes, ignition and spark gaps, or other items may contain exempt quantities of radioisotopes and present a minimal hazard risk when damaged. Use gloves when handling, and bag or wrap damaged items for proper disposal.

### **3.14. Investigating Radioactive Materials Incidents and Accidents**

3.14.1. The permittee is responsible for investigating and preparing a report on events listed in **paragraph 3.12** and **Attachment 11** that involve permitted radioactive materials, unless directed otherwise by higher authority. The permit RSO, assisted by the installation RSO, normally performs the investigation.

3.14.2. The Commander of the affected organization is responsible for the investigation and report for reportable events not involving permitted materials. The installation RSO normally performs the investigation.

3.14.3. Investigating a mishap or incident according to AFI 91-204, *Safety Investigations and Reports*, may generate information requiring a separate report that can be forwarded to the NRC. See **paragraph 3.12.10** and **3.12.11** about protecting classified information. Consult with AFMOA/ SGPR.

3.14.4. Forward reports to organizations listed in **paragraph 3.12.6**.

3.14.5. AFMOA/SGPR will decide when an investigation of an event involving radioactive materials governed by this instruction is complete.

3.14.6. The NRC or AFIA/SG reserves the right to independently investigate an incident or mishap involving permitted or NRC-licensed radioactive materials to confirm Air Force reports or to decide whether the installation violated permit conditions, this instruction or Federal regulations (see **paragraph 3.16**).

### **3.15. Retaining Records**

Records shall be retained for the receipt, storage, distribution, use, transfer, disposal and incident involving permitted or licensed radioactive materials in accordance with 10 CFRs Parts 19, 20, 30-36, 40, 70, 71, as implemented in <https://afrims.amc.af.mil/>. If a conflict exists, then maintain records with the more stringent retention period. See **Attachment 7** for retention periods.

### **3.16. Inspecting Permit Holders and Enforcing Compliance**

3.16.1. Inspections: The Air Force must inspect permit holders for compliance with their permit, this instruction and Federal regulations. Inspections are routinely conducted and are unannounced. In accordance with 10 CFR 30.52, *Inspections*, Commanders and permittees

shall facilitate inspections at all times. Detailed inspection policy for permits is provided in [Attachment 13](#).

3.16.1.1. The permit type and scope sets the frequency and content of routine AFIA/SG inspections.

3.16.1.2. An inspection priority code is assigned to each permit (refer to the cover letter issuing the permit or permit renewal). A priority 1 permit is a high priority permit inspected annually; a priority 3 permit is inspected every three years. More frequent inspections may be made based on scale of economies during travel, to enforce compliance, evaluate a specific problem or follow-up to determine if corrective actions have been taken.

3.16.1.3. Copies of Air Force inspection reports are forwarded to:

3.16.1.3.1. The permittee,

3.16.1.3.2. The owning MAJCOM/SG and IG,

3.16.1.3.3. AFMOA/SGPR (Attention: the permit action officer), and

3.16.1.3.4. The NRC when approved according to AFI 90-201, *Inspector General Activities*.

3.16.1.4. Mark, handle and safeguard these reports according to AFI 90-201, *Inspector General Activities*.

3.16.1.5. Permittees must report corrective actions for noncompliance in accordance with this instruction and AFIA/SG.

3.16.1.6. The NRC regional offices conduct permit compliance inspections without notice (no-notice) as part of the NRC's continual assessment of the Air Force's licensing and inspection program.

3.16.1.6.1. NRC inspections may be concurrent with, or separate from, the Air Force's permit compliance inspections.

3.16.1.6.2. The NRC will send a formal inspection report to AFMOA/SGPR with a Notice of Violation (NOV) for any areas of non-compliance noted during an NRC inspection.

3.16.1.6.3. AFMOA/SGPR will subsequently send a copy of the inspection to the permittee, and when required, request a written response detailing any corrective actions for NOV's noted.

3.16.1.6.4. AFMOA/SGPR will provide copies of both the NRC inspection report and any written response from the permittee to AFIA.

3.16.2. Enforcement: The RIC, AFMOA/SGPR acting for the RIC or the NRC may take enforcement action as a result of reported incidents, inspection findings, or identified violations. Enforcement policy details are provided in [Attachment 14](#).

3.16.2.1. The RIC, generally through AFMOA/SGPR, takes administrative enforcement actions including:

3.16.2.1.1. Issuances of Notices of Violation

3.16.2.1.2. Suspending or rescinding authority to possess or use radioactive materials.

3.16.2.1.3. Implementing additional control measures to permits.

3.16.2.1.4. Rescinding a person's authority to use or supervise use of radioactive materials.

3.16.2.2. Commanders and the permittee are responsible for the discipline of individuals according to the Uniform Code of Military Justice (UCMJ).

3.16.2.3. The NRC can also enforce regulatory compliance in accordance with 10 CFR 2, *Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders*. The NRC's enforcement policy can be found at: <http://www.nrc.gov/what-we-do/regulatory/enforcement/enforce-pol.html>. The NRC's enforcement procedures are found at: <http://www.nrc.gov/what-we-do/regulatory/enforcement/guidance.html#manual>. **NOTE:** The NRC also issues press releases on enforcement actions.

### 3.17. Managing Allegations.

Employees have a right and responsibility to report unsafe practices, or those that may be in violation of permit conditions, this Air Force instruction, or Federal regulations. Employees shall report their concerns immediately to their supervisor. If resolution of the issue cannot be achieved, then the employees can make allegations directly to AFMOA/SGPR or the NRC (Refer to *Reporting Safety Concerns to the NRC* (NUREG/BR-0240, Rev. 3)). All permittee employees are required to be aware of NRC Form 3 that must be posted for the employees to view. **Attachment 15** provides details on management of allegations.

3.17.1. "Add" Employees have a right and responsibility to report unsafe practices, or those that may be in violation of permit conditions, this Air Force instruction, or Federal regulations. Employees shall report their concerns immediately to their supervisor. If resolution of the issue cannot be achieved, then the employees can make allegations directly to AFMSA/SG3PB or the NRC (Refer to *Reporting Safety Concerns to the NRC*).

3.17.2. "Add" For allegations against the RICS or AF/IG, individuals may contact the NRC representative in their region.

### 3.18. Adopted Forms.

(OFFUTTAFB)AF Form 847, *Recommend Change of Publication*

NRC Form 3, *Notice to Employees*

NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Jurisdiction or Offshore Waters (NRC Reciprocity Form)*

NRC Form 313, *Application for Material License*

NRC Form 314, *Certificate of Disposition of Materials*

NRC Form 483, *Registration Certificate-In Vitro Testing with Byproduct Material Under General License*

### 3.19. Prescribed Forms.

The RICS prescribes a custom form for all template permit actions. The “Request for Template Permit Action” form may change based on regulatory requirements. It can be obtained by writing or calling AFMSA/SG3PB, or by accessing: [https://kx.afms.mil/rad\\_prot](https://kx.afms.mil/rad_prot).

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USAF, MC, CFS  
Surgeon General

**(OFFUTTAFB)**

JOHN N.T. SHANAHAN, Brigadier General,  
USAF, Commander, 55th Wing



## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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### ***Abbreviations and Acronyms***

**AEA**—Atomic Energy Act of 1954, as amended

**AFRMWO**—Air Force Radioactive and Mixed Waste Office

**ALARA**—As Low As Reasonably Achievable

**(OFFUTTAFB) ALARA**— As Low As Reasonably Achievable

**CERCLA**—Comprehensive Environmental Response, Compensation, and Liability Act

**CFR**—Code of Federal Regulations

**CRCPD**—Conference of Radiation Control Program Directors (a professional organization made up of the Directors and staffs of State regulatory programs)

**DOD**—Department of Defense

**(OFFUTTAFB) DOD**— Department of Defense

**DOE**—Department of Energy

**(OFFUTTAFB) DOE**— Department of Energy

**DOL**—Department of Labor

**DOT**—Department of Transportation

**(OFFUTTAFB) DOT**— Department of Transportation

**DU**—Depleted uranium

**EPA**—Environmental Protection Agency

**(Added-OFFUTTAFB) IATA**— International Air Transport Association

**LLRW**—Low Level Radioactive Waste

**MML**—Master Materials License

**NARM**—Naturally Occurring or Accelerator Produced Radioactive Material

**NOV**—Notice of Violation

**NPDES**—National Pollution Discharge Elimination System

**NRC**—Nuclear Regulatory Commission

**(OFFUTTAFB) NRC**— Nuclear Regulatory Commission

**NSN**—National Stock Number

**PN**—Part number

**RADIAC**—Radioactivity Detection Indication and Computation (refers to radioactivity detection instrumentation)

**(Added-OFFUTTAFB) RAM**— Radioactive Material

**RCRA**—Resource Conservation and Recovery Act

**RDS**—Records Disposition Schedule

**RSO**—Radiation Safety Officer

**(OFFUTTAFB) RSO**— Radiation Safety Officer

**SNM**—Special Nuclear Material

**SSDR**—Sealed Source and Device Registry

**T.O.**—Technical Order

**UCMJ**—Uniform Code of Military Justice

**U.S.C.**—United States Code

### *Terms*

**91(a) Material**—Radioactive material exempted from NRC licensing controls under Section 91(a) of the AEA of 1954, as amended, in the interest of national defense, under the possession of the DOE.

**91(b) Material**—Radioactive material exempted from NRC licensing controls under Section 91(b) of the AEA of 1954, as amended, in the interest of national defense, under the possession of the DOD. These include materials in nuclear weapons.

**Accelerator Produced Radioactive Material**—Radioactive material produced as the result of operating a particle accelerator.

**Agreement State**—Any state, territory, or possession of the United States that, by agreement with the NRC, has assumed regulatory authority over byproduct, source, and certain small quantities of special nuclear material.

**Air Force Master Materials License**—The single NRC license issued to the Department of the Air Force delegating to the Air Force regulatory authority over byproduct, source, and limited quantities of special nuclear material used by the Air Force.

**Allegation**—Declaration, statement or assertion of impropriety or inadequacy associated with NRC or U.S. Air Force regulated activities, the validity of which has not been established.

**Alternate Radiation Safety Officer**—A person, named on the US Air Force Radioactive Material Permit, who is qualified by education or training, to act as RSO when the primary RSO is absent. Unless otherwise requested by the permittee, the alternate RSO becomes the primary RSO when the named primary RSO leaves the organization.

**Annual**—Recurring, done, or performed every year (i.e. every 12 months).

**As Low As Reasonably Achievable (ALARA)**—The principle that personnel exposures must be maintained as low as possible consistent with existing technology, cost, and operational requirements.

**Authorized User**—as defined 10 CFR 35.2: a physician, dentist or podiatrist who meets the requirements in 10 CFR 35.59, and 35.190(a), 35.290(a), 35.390(a), 35.392(a), 35.394(a), 35.490(a), 35.590(a) or 35.690(a), and is an authorized user as specified on an AF radioactive material permit.

**Byproduct Material**—Radioactive material (except source or special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using source or special nuclear material. The definition of byproduct material has changed with the Energy Policy Act of 2005 to include some forms of naturally occurring or accelerator produced radioactive material (see AFPD 40-2)

**Committee**—The US Air Force Radioisotope Committee.



**Exclusive Federal Jurisdiction**—Property under the exclusive control or ownership of the Federal government that has been ceded legislative power by the state or has had such power reserved from grants to the states.

**Human Use**—The internal or external administration of radioactive materials, to humans.

**Incident**—For purpose of this instruction, an incident is any event involving radioactive material that is not defined as a mishap, or that may result in adverse public reaction. This includes weather-induced events, attacks against sensitive information or spontaneous/unforeseen failures of equipment or material.

**Items**—Instruments, manufactured articles or major end items constructed of or having radioactive materials as a component part, often assigned a NSN, normally procured, stored and distributed through Air Force and Department of Defense logistical supply systems. Items include but are not limited to such devices as Chemical Agent Detectors, RADIAC sets, Lensatic compasses, dials and gauges. Items are not considered to include any loose radioactive material, radioactive contamination on other materials or in soil, or any material exhumed from a radioactive burial site.

**License**—Written authorization from the NRC or an Agreement State to acquire, receive, use, store or transfer byproduct, source, or special nuclear material. Written authorization from a State to receive, possess, use, or transfer naturally occurring radioactive material or accelerator produced radioactive material. Licenses will be either (1) General License published in NRC or Agreement State Regulations, that is effective without any need to send an application to, or that is effective to any applicant on registration with, the NRC or an Agreement State or (2) Specific License issued by the NRC or Agreement State to a named applicant who has filed an application authorizing acquisition, ownership, receipt, storage, use, transfer, and disposal of chemical or physical forms of radioisotopes specified in the license. This license has an expiration date renewable on application to the issuing authority. The license may be limited in scope (authorizing only certain specific radioisotopes for limited users) or broad (authorizing the use of a wide variety of radioisotopes without regard to form, quantity, or use).

**Medical Event**—any event that meets the criteria of 10 CFR 35.3045(a).

**Mishap**—For purposes of this instruction, a mishap is defined in AFI 91-202. It is an event involving human acts of omission or commission involving a nuclear reactor, radioisotope power system, or radioactive material resulting in any of the following:

1. A loss of control of radioactive material that presents a hazard to life, health, or property. This includes loss of control that may result in any person in an unrestricted area exceeding the limits for exposure to ionizing radiation as stated in Title 10, CFR, Part 20, *Standards for Protection Against Radiation*.
2. Any unexpected event involving radioactive materials or radiation exposure that is serious enough to warrant the interest or action of officials or agencies outside the Air Force. This category includes event: having domestic or international implications, those that may cause inquiries by the public or press, and those requiring immediate notification to the NRC under Title 10, Code of Federal Regulations, Part 20, *Standards for Protection Against Radiation*.

**Mixed Waste**—A waste that contains both hazardous waste as defined by the Resource Conservation and Recovery ACT (RCRA) and source, special nuclear or byproduct material subject to the Atomic Energy Act of 1954, as amended.

**NUREG**—technical reports on various topics related to the regulation of nuclear energy published by Nuclear Regulatory Commission.

**Naturally Occurring and Accelerator Produced Radioactive Material (NARM)**—The general term applied to radioactive material that is either naturally occurring (e.g. radium) or accelerator produced (e.g. fluorine-18)

**Naturally Occurring Radioactive Material (NORM)**—Radioactive material which occurs in nature and which is not regulated by the Atomic Energy Act as source, Special Nuclear, or byproduct Material.

**Nuclear Reactor**—A facility using fissile materials in a self-supporting chain reaction (nuclear fission) to produce heat or radiation for both practical application and research and development.

**Nuclear Regulatory Commission**—An agency established by Title II of the Energy Reorganization Act of 1974 (Public Law 93-438) to regulate byproduct, source, and special nuclear material as provided for by the Atomic Energy Act of 1954, as amended. Within the NRC, final authority rests with the five member Commission acting as a body.

**(Added-OFFUTAFB) Occupancy Factor**—The fraction of time an area of interest is physically occupied by the same individual.

**Particle Accelerator**—A device that accelerates charged particles to produce a beam of high-energy radiation or to produce radioisotopes.

**Permit**—Shortened term for USAF or USN Radioactive Material Permit. See USAF Radioactive Material Permit.

**Permittee**—The Commander or commander equivalent of the Air Force organization identified in block 1 of a permit.

**Prescribed Dosage**—The quantity of radiopharmaceutical activity as documented in (1) a written directive or (2) in the diagnostic clinical procedures manual or in any proper record according to the directions of the authorized user for diagnostic procedures.

**Prescribed Dose**—(1) For gamma stereotactic radiosurgery: The total dose as documented in the written directive, (2) For brachytherapy: Either the total source strength and exposure time or the total dose, as documented in the written directive.

**Radiation Safety Officer**—An individual with specific education, military training, and professional experience in radiation protection practice appointed by a Commander or the USAF Radioisotope Committee to manage radiation safety programs. The term "Radiation Safety Officer" is a functional title and does not denote a commissioned status or specialty code. An RSO should be the most technically qualified person available. The RSO must have the education, military training, and professional experience needed for the job. Take care when addressing RSO qualifications and duties to distinguish between installation and permit RSOs. Individuals appointed as the installation RSO might not always have the specific technical experience and training needed to qualify as the permit RSO.

**Radioactive Item**—A single unit or article constructed of or having radioactive materials as a component part

**Radioactive Material**—Materials whose nuclei, because of their unstable nature, decay by emission of ionizing radiation. The radiation emitted may be alpha or beta particles, gamma or X-rays, or neutrons.

**Radioactive Waste**—Waste that contains radioactive material. Radioactive waste can be generally classed in one of four categories:

**High Level Radioactive Waste (HLRW)**—HLRW is spent nuclear fuel from nuclear power plants and waste material from reprocessing spent nuclear fuel.

**Transuranic Waste**—Waste material that contains transuranic elements with half-lives greater than 20 years and concentrations greater than 100 nanoCuries per gram. A transuranic is an element with an atomic number greater than 92 (e.g. plutonium, americium, curium).

**Low level Radioactive Waste (LLRW)**—LLRW is any radioactive waste that is not HLRW, uranium tailings, or transuranic waste.

**Mixed Waste**—Waste that contains hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954 (i.e., material regulated by the Nuclear Regulatory Commission).

**Radioisotope Thermoelectric Generator (RTG)**—A power system using the thermal energy produced by the radioactive decay of the unstable nuclei of certain isotopes as its energy source.

**Restricted Area**—For this instruction, a restricted area is an area having access limited to protect individuals against undue risks from exposure to radiation and radioactive material. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

**SAFE HAVEN**—Temporary storage provided Department of Energy classified shipment transporters at Department of Defense facilities in order to assure safety and security of nuclear material and/or non-nuclear classified material.

**Source Material**—Uranium or thorium or any combination thereof in any physical or chemical form; or ores that have, by weight, one-twentieth of 1 percent (0.05 percent) or more of uranium, thorium, or any combination thereof. Source material does not include special nuclear material.

**Special Nuclear Material**—Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235; any other material that the NRC determines to be special nuclear material and any material artificially enriched by the foregoing. Special nuclear material does not include source material.

**Unrestricted Area**—For this instruction, an unrestricted area is any area access to which is not controlled by the permittee. Generally, it is an area that is accessible to a person who is not trained to work with radioactive materials or accessible to a member of the public.

**USAF Radioactive Material Permit**—Written authorization from the USAF Radioisotope Committee for Air Force organizations to receive, possess, use, distribute, store, transport, transfer and dispose of radioactive materials. Permits parallel NRC licenses in applications and

scope. Unlike the NRC, a single permit may authorize byproduct, source, special nuclear material, Accelerator Produced Radioactive Material and Naturally Occurring Radioactive Material.

**USAF Radioisotope Committee (RIC, Committee)**—A committee established in accordance with requirements of the Air Force Master Materials License to coordinate the administrative and regulatory aspects of licensing, receiving, possessing, using, distributing, storing, transporting, transferring and disposing of all radioactive materials in the Air Force, except that material transferred from the Department of Energy to the Department of Defense in nuclear weapon systems, certain radioactive parts of weapons systems and nuclear reactor systems, parts and fuel controlled under Section 91(a) or 91(b) of the AEA. It is composed of stake-holder representatives from Staff Air Force and Headquarters Air Force.

**USAF Radioisotope Committee Secretariat**—The office providing day-to-day management of AF permitting activities under the purview of the Air Force MML. The Secretariat is the Radiation Protection Division of the Air Force Medical Operations Agency (AFMOA/SGPR).

**User**—For this instruction, a user is (1) An organization authorized by a USAF Radioactive Material Permit to have and use radioactive materials, or (2) A person specifically named on a USAF Radioactive Material Permit as authorized to handle or to supervise handling radioactive materials listed on the permit, or (3) A person named in a permit condition by a radiation safety committee with local approval authority to handle or supervise the handling of radioactive materials listed on the permit. Also see Authorized User.

**Written Directive**—an authorized user's record written order for the administration of byproduct material or radiation from byproduct material to a specific patient or human research subject, as specified in 10 CFR 35.40. An order must be in writing for a specific patient, dated and signed by an authorized user before the administration of I-131 greater than 30 microCuries, any therapeutic dosage of unsealed byproduct material or any therapeutic dose of radiation from byproduct material.

## Attachment 2

## LICENSE EXEMPT QUANTITIES

**A2.1.** These exemptions apply to accelerator produced and naturally occurring radioisotopes and are in addition to those in 10 CFR 30.71, *Schedule B*.

***Exempt Quantities:***

<u>Radionuclide</u>	<u>microCuries</u>	<u>Radionuclide</u>	<u>microCuries</u>
Cesium-129	100	Cobalt-57	100
Gallium-67	100	Germanium-68	10
Gold-195	10	Indium-111	100
Iodine-123	100	Iron-52	10
Potassium-43	10	Rubidium-81	10
Sodium-22	10	Yttrium-87	10

**EXCEPTIONS:** These exemptions do not apply to radioactive material in any food, beverage, cosmetic, drug, or other commodity or product designed for ingestion or inhalation by, or application to, a human being. Reference document: Conference of Radiation Control Program Directors, "Suggested State Regulations for Control of Radiation", Vol. I, January 1991, Part C, Appendix B

### Attachment 3

#### MANAGING GENERALLY LICENSED DEVICES

**A3.1. Generally Licensed Devices:** The Nuclear Regulatory Commission or Agreement State issues a general license to acquire, receive, use, store or transfer certain devices that contain radioactive material which have been manufactured, tested and labeled by the manufacturer in accordance with the specifications contained in a specific license issued to the manufacturer by the Nuclear Regulatory Commission. These devices are labeled as being generally licensed and include:

A3.1.1. 10 CFR 31.3, *Certain Devices and Equipment*: This section includes static elimination devices consisting of not more than 500 microCuries of polonium-210 per device and ion generating tubes consisting of not more than 500 microCuries of polonium-210, or not more than 50 milliCuries of hydrogen-3 (tritium).

A3.1.2. 10 CFR 31.5, *Certain Detecting, Measuring and Controlling Devices and Devices Producing Light*: This section includes devices to detect and measure something, or produce light or an ionized atmosphere. Devices include Ionscans, tritium exit signs, IBIS indicators, and some chemical agent detectors (e.g. APD-2000).

A3.1.2.1. **EXCEPTION:** Generally Licensed Devices under 10 CFR 31.5 that contain at least 10 mCi of cesium-137, 0.10 mCi of strontium-90, 1.0 mCi of cobalt-60, or 1.0 mCi of americium-241 or any other transuranic shall be specifically licensed. See [Attachment 4](#).

A3.1.3. 10 CFR 31.10, *Sr-90 Ice Detection Devices*. These devices includes those that contain no more than 50 microCuries of strontium-90.

A3.1.4. 10 CFR 31.11, *In-Vitro Clinical Testing*. These materials include prepackaged kits containing not more than 10 microCuries iodine-125, 10 microCuries iodine-131, 10 microCuries carbon-14, 50 microCuries tritium, 20 microCuries iron-59, and 10 microCuries selenium-75. Air Force organizations that want to use radioactive materials specified under 10 CFR 31.11 shall:

A3.1.4.1. Possess an existing permit that authorizes medical use of radioactive materials, or apply for an NRC registration number by sending a completed NRC Form 483, **Registration Certificate-In Vitro Testing with Byproduct Material Under General License**, to AFMOA/SGPR.

A3.1.4.2. The laboratory director shall sign the NRC Form 483. Registration under this paragraph also authorizes use of cobalt-57 for in vitro testing in quantities of 10 microCuries or less per kit.

A3.1.4.3. Conduct and maintain a record of quarterly radiation swipe surveys when using radio-nuclides other than tritium and carbon-14.

#### A3.2. Acquisition of Generally Licensed Devices

Generally licensed devices should be purchased using Defense Federal Acquisition Regulations, assigned a National Stock Number and registered in the Federal Logistics Information System and Hazardous Material Information Resource System. Local purchase of these devices is

strongly discouraged. In either case, devices shall be registered in the AF logistics system and identified as radioactive.

### **A3.3. Requirements for Possession of Generally Licensed Items and Devices under 10 CFR**

**31.5** The licensee must appoint an individual from within their organization who will ensure compliance with applicable regulations, to include the general provisions of 10 CFR 31.2, **Terms and Conditions**, the specific regulatory requirements unique to the device, and who will have the authority to execute the necessary actions to ensure compliance. The appointed individual shall work with the installation RSO to ensure compliance with applicable regulations.

A3.3.1. They shall preserve all labels affixed to the device and follow all instructions on the label.

A3.3.2. They shall test the device for leakage of radioactive material, and proper operation of any on-off mechanism or indicator, if any, at no longer than 6 month intervals, or as specified by the device label.

A3.3.2.1. **EXCEPTION:** Devices containing only krypton.

A3.3.2.2. **EXCEPTION:** Devices containing only tritium.

A3.3.2.3. **EXCEPTION:** Devices containing not more than 100 microCuries of other beta and/or gamma emitter or 10 microCuries of alpha emitter, and devices held in their initial shipping container prior to installation.

A3.3.3. They shall suspend operation of the device if there is damage/failure to the device's shielding, detection of removable contamination exceeding 0.005 microCurie, or failure of its on/off mechanism.

A3.3.4. They shall not transfer a 31.5 device to another organization unless that organization has a *specific license* to receive that device. Upon transfer of a generally licensed item, a report must be submitted within 30 days to the NRC to include the recipient's contact information and license number, the name, model and serial number of the unit, and the date of transfer.

A3.3.4.1. They shall only transfer the device to another general licensee if the device remains in use at a particular location, and information about the device is provided by the transferor to the transferee. Within 30 days of transfer of a generally licensed item, a report must be submitted by the transferor to the NRC to include the transferee's contact information and name of the responsible individual, the name, model and serial number of the device, and the date of transfer.

A3.3.4.2. They shall properly dispose of generally licensed devices. See [Attachment 10](#).

A3.3.4.3. They shall under no circumstances transfer any generally licensed device/item to DRMO for disposal.

A3.3.5. They shall comply with the reporting requirements of [Attachment 11](#) as they apply to reporting radiation incidents, theft or loss of material.

A3.3.6. They shall report to the NRC changes to mailing addresses for the location of use (to include name of the general licensee) within 30 days of the effective change.



A3.3.7. They shall not store generally licensed devices without use for more than 2 years. Devices held in storage requiring leak tests or testing of the on-off device need not be tested if the storage time exceeds the interval of testing. Devices that contain shutters must be locked in the closed position during storage. The device must be leak tested before transfer or use and the shutter must be tested before use.

A3.3.8. Reports to the NRC required above shall be sent to: Nuclear Material Safety and Safeguards, ATTN: GLTS, U.S. Nuclear Regulatory Commission, Washington DC, 20555-0001.

#### Attachment 4

### MATERIAL CONTROL AND APPLYING FOR A USAF RADIOACTIVE MATERIAL PERMIT

#### A4.1. Regulatory control of radioactive material in the Air Force is accomplished as follows:

A4.1.1. Exempted: Radioactive material in items obtained, manufactured, and distributed by a licensee having a specific NRC license authorizing exempt distribution or otherwise exempted by NRC in accordance with 10 CFR or [Attachment 2](#) is not controlled. Examples include:

A4.1.1.1. Electron tubes, spark gaps, timepieces covered under 10 CFR 30.15.

A4.1.1.2. Lensatic compasses covered under 10 CFR 30.19.

A4.1.1.3. Smoke detectors specified in 10 CFR 30.20.

A4.1.1.4. Thorium lantern mantles and welding rods covered under 10 CFR 40.13.

**NOTE:** Some items, such as magnesium-thorium components, may be exempt from licensing but not exempt from disposal requirements. These items shall be properly identified as containing radioactive material and assigned a Hazardous Characteristic Code (A1, A2, or A3).

A4.1.2. Controlled by Technical Order: Some radioactive material items are controlled by technical orders or Air Force instructions. An example would be local possession of depleted uranium munitions.

A4.1.3. A Template Permit: A template permit is issued for sealed source items posing minimal radiological risk and having standardized conditions of use. Such items can contain NARM or be generally or specifically licensed or permitted.

A4.1.4. A Non-Template Permit: A non-template permit is issued for large scope, large quantity radioactive material-use situations that require custom applications and many conditions and requirements to assure safe use.

A4.1.5. A General License: A general license issued by the Nuclear Regulatory Commission (see [Attachment 3](#)).

#### A4.2. Example Items Controlled by Technical Order, Air Force Instructions or General License:

A4.2.1. Radium dial, gauges, buttons or other radioactive material contained on static display aircraft or other military items (see AFI 84-103, *U.S. Air Force Heritage Program*).

A4.2.2. Airframe or engine components constructed of magnesium-thorium alloy or nickel-thorium alloy (individual system technical orders, 10 CFR 40.13 (c)(8)).

A4.2.3. Thoriated optics (individual technical order, 10 CFR 40.13 (c)(7)).

A4.2.4. Airframe counterweights constructed of depleted uranium (individual system technical orders, 10 CFR 40.13 (c)(5)).

A4.2.5. Individual storage areas for 30 mm API munitions having depleted uranium penetrators are controlled by Technical Order and a central distribution permit.

A4.2.6. Tritium exit signs (General license, 10 CFR 31.5 – but prohibited from AF acquisition by this instruction).

#### **A4.3. Template Permits:**

A4.3.1. Template permitted items are generally commodity items that pose low health risks. Common items include:

A4.3.1.1. M8A1 Chemical Agent Detectors (CADs) using 250 microCuries of americium-241, Chemical Agent Monitors (CAMs) or Improved Chemical Agent Monitors (ICAMs) using 15 milliCuries of nickel-63, Automatic Chemical Agent Detector and Alarm (ACADA) containing two 15 milliCurie nickel-63 sources.

A4.3.1.2. Inflight Blade Integrity System (IBIS) indicators using either 100 or 500 microCuries of strontium-90.

A4.3.1.3. LANTIRN Pods using two, 4 microCuries americium-241 sources.

A4.3.1.4. Niton XRF Lead Paint Analyzers containing cadmium-109, and SCITEC XRF detectors containing cobalt-57.

A4.3.2. The list of template permitted items changes periodically. The AFMOA web site, [https://kx.afms.mil/rad\\_prot/](https://kx.afms.mil/rad_prot/) should be consulted for the most current list of template permitted items and the standardized "Request for Template Permit Action" form and application instructions. Do not alter the form.

A4.3.3. Applying for or renewing a template permit is accomplished through completion of the "Request for Template Permit Action" form. Applications and amendments should be forwarded to AFMOA/SGPR at least 30 days prior to the receipt of material or requested change, respectively. Once received, a renewed or amended permit will be prepared and provided to the permittee. **NOTE:** For renewals only, if RSO qualifications are already on file, they need not be re-sent.

**A4.4. Non-Template Permits:** Radioactive material uses not identified in [A4.3.1](#) above require a non-template permit. Common activities and practices performed under a non-template permit include: nuclear medicine, irradiator operations, and significant remediation activities at sites that were contaminated with byproduct, source, special nuclear material or NARM, to include radium. AFMOA/SGPR should be contacted for application guidance and permit requirements on all non-template permits.

A4.4.1. Applying for Non-Template Permits: An NRC Form 313, **Application for Material License**, shall be completed and shall include a detailed description of the radiation protection program for the intended practice. Guidance for application preparations can be found in the NRC NUREG 1556-series at <http://www.nrc.gov/reading-rm/doc-collections/>. Contact AFMOA/SGPR for guidance on permitting requirements for remediation activities (also see [Attachment 9](#)). Certain permitted activities meeting the criteria of 10 CFR 30.32(i) and 10 CFR 30.35(a) shall include, respectively:

A4.4.1.1. An emergency response plan complying with the criteria prescribed in 10 CFR 30.32(i)-(xii). **NOTE:** This is a rare requirement for AF permittees.

A4.4.1.2. A decommissioning financial assurance (cost estimate and funding) plan to satisfy the requirements of 10 CFR 30.35, 10 CFR 40.36, or 10 CFR 70.25. AFMOA/SGPR can assist in developing your cost estimate.

A4.4.2. Amending a Non-Template Permit: Send requests to amend permitted activities, conditions, or specific tie-downs at least 90 days prior to the desired date of implementation to AFMOA/SGPR. The memo should be as detailed as possible, especially if it includes the changing of procedures that could affect exposure levels to staff or members of the general public. Details must include: source or device, amount, type, manufacturer, source or device use, locations of use, exposure levels (if they have changed), and any new procedures.

A4.4.3. Renewal of a Non-Template Permit:

A4.4.3.1. Renewal applications for non-template permits must be received 90 days (three months) prior to the expiration of the permit. Once a permit renewal application is received, a "Deemed Timely Filed" memo will be provided that serves to demonstrate the permitted activity is in good standing until the renewed permit is issued.

A4.4.3.2. Renewal packages must be completed without reference to earlier permit documentation.

A4.4.3.3. While a permittee is in deemed timely filed status, requirements and conditions of the expiring permit remain in full force and effect. Contact AFMOA/SGPR when immediate changes to permit conditions are required.

#### **A4.5. Routing and Timelines for Permit Actions:**

A4.5.1. Route all permit requests (new, amendments, renewal and terminations) through the host installation RSO to AFMOA/SGPR, with a courtesy copy to the MAJCOM Bioenvironmental Engineer.

A4.5.2. Template permit requests can be faxed or a scanned version e-mailed to AFMOA/SGPR. They shall be followed by the signed original request.

A4.5.3. Send template permit requests so they arrive at AFMOA/SGPR at least 30 calendar days prior to the date the request is to be implemented.

A4.5.4. Send non-template permit requests to AFMOA/SGPR at least 90 days prior to the date the request is to be implemented. Submit at least a year in advance if the use involves new construction. Typical uses requiring extended processing time will include:

A4.5.4.1. New research or laboratory facilities,

A4.5.4.2. Nuclear medicine programs,

A4.5.4.3. Major industrial operations,

A4.5.4.4. Multi-Curie irradiators or radiographic sources,

A4.5.4.5. Firing ranges using depleted uranium munitions,

A4.5.4.6. Remediation activities.

A4.5.5. AFMOA/SGPR will provide a copy of permits issued to AFIA/SG.

## Attachment 5

### MINIMUM TRAINING AND EXPERIENCE REQUIRED FOR PERMIT RSO

**A5.1. 10 CFR 31 Sources and Devices (e.g. static eliminators, luminous safety devices for aircraft, certain measuring devices, and ice detection equipment identified in 10 CFR 31):** RSOs must have formal training commensurate with the type and quantity of radioactive material to be possessed. The training shall include any appropriate manufacturer's training, device accountability, reporting incidents, transfer requirements, adherence to manufacturer's instructions, disposition requirements, leak testing (if applicable) and any other radiation safety requirements relevant to the device. Refer to 10 CFR 31 for other specific requirements.

**A5.2. Portable Gauges:** RSO training commensurate with guidance in NUREG 1556, Volume 1.

A5.2.1. Gauges Covered by Template Permit (e.g. CAMs, CADs, LANTIRN/SNIPER pods, NITON XRF meters): RSOs must have successfully completed a RIC approved formal RSO training course, to include regulatory requirements of the NRC for radioactive material accounting, reporting, transferring, shipping and disposing of material and servicing and leak testing of the specific gauge.

A5.2.2. Gauges Covered by Non-Template Permit (e.g. Troxler density gauges): RSOs must have 40 hours of formal RSO training that encompasses the requirements in [A5.2.1](#), to include manufacturer's instructions and precautions.

**A5.3. Fixed Gauges:** RSO must have successfully completed 40 hours of formal RSO training, commensurate with guidance in NUREG 1556, Volume 4, including regulatory requirements of the NRC for radioactive material accounting, reporting, transferring, shipping and disposing of material and servicing and leak testing.

**A5.4. Academic, Research and Development, and Other Permits of Limited Scope:** RSO must have successfully completed 40 hours of formal RSO training, and have additional training and experience relevant to the permitted activity, and commensurate with guidance in NUREG 1556, Volume 7.

**A5.5. Broad Scope Permits:** As specified in 10 CFR 33 (see also NUREG 1556, Volume 11), with additional training, if required, in specific applications or use appropriate to the permit.

**A5.6. Medical Permits:** As specified in 10 CFR 35 (see also NUREG 1556, Volume 9).

**A5.7. Other Permits:** RSO qualifications for all other permits will be approved by AFMOA/SGPR on a case-by-case basis. General criteria used by AFMOA/SGPR include the education, training and experience of the individual, regulatory requirement specified in 10 CFR (if any) and guidance provided in the applicable NUREG 1556 Volume for the type of permitted activity.

**A5.8. Qualifications to be an RSO instructor.**

A5.8.1. 10 CFR 31 sources and devices. The instructor shall have successfully completed 40 hours (or more) of formal radiation safety officer training course or equivalent training experiences as approved by the RIC and have one year experience and practice in the possession and/or use of devices and sources as prescribed in 10 CFR 31.

A5.8.2. Template Permit Portable Gauges. The instructor of the "Template Permit RSO Training Course" shall:

- a. be a 43Y3/4, 43E3/4, or civil service equivalent with comparable experience;
- b. have 3-years minimum RSO experience on an AF permit with a good inspection performance history; and
- c. have other radiation safety experience beyond template permit RSO (i.e., non-template permit RSO, NDI safety, medical, etc).
- d. The USAF School of Aerospace Medicine has local instructor approval authority, and
- e. the RIC has instructor qualifications waiver and program content approval authority.

A5.8.3. Fixed Gauges. The instructor shall have completed a formal 40-hour radiation safety officer course, the manufacturer's course, if available, and one year of experience as an RSO on a permit authorizing the possession and/or use of fixed gauges.

A5.8.4. Instructors shall be approved by AFMOA/SGPR, with the exception of instructors at the USAF School of Aerospace Medicine.

**A5.9. Radiation Safety Officer Course Curricula:** A radiation safety officer course designed for training personnel to manage basic radiation safety programs involve non-template permits, shall, at a minimum, include:

A5.9.1. Radiation safety topics:

1. Radiation vs. contamination
2. Internal vs. external exposure and dose
3. Biological effects of radiation
4. Types and hazards associated with radioactive material possessed
5. ALARA concept
6. Training in the principles of time, distance, and shielding to minimize exposure
7. Sealed source location within the gauge

A5.9.2. Regulatory requirements:

1. Applicable regulations
2. License/Permit conditions, amendments, renewals
3. Locations of use and storage of radioactive materials
4. Material control and accountability
5. Annual audit of radiation safety program
6. Transfer and disposal
7. Record keeping
8. Prior events involving permitted material
9. Managing incidents/mishaps

10. Recognition and assurance of radiation warning signs; visibility and legibility
11. Inspection by regulatory agencies
12. Requirement for complete and accurate information
13. Employee protection
14. Deliberate misconduct

A5.9.3. AFMOA/SGPR may temporarily waive certain requirements for training (e.g. time of experience) based on mission exigencies. However, the permit RSO will work under a preceptor or limitations imposed by AFMOA/SGPR.



**Attachment 6****POSTING NOTICES TO WORKERS**

**A6.1.** Each permittee shall post a supplemental notice that contains, at a minimum, the information given on the sample notice of this attachment.

**SUPPLEMENTARY NOTICE TO NRC FORM 3**

US Air Force Radioactive Material Permit No. \_\_\_\_\_<sup>2</sup> issued under the Air Force's Nuclear Regulatory Commission Master Materials License No. 42-23539-01AFP authorizes use of radioactive materials at this location.

Contact \_\_\_\_\_<sup>3</sup> to see a copy of the permit, amendments and supporting documents including Title 10 Code of Federal Regulations Parts 19, 20 and 21, AFI 40-201, and all operating procedures applicable to permitted activities. The Air Force Master Materials License, amendments, and supporting application is maintained by the USAF Radioisotope Committee Secretariat at Bolling Air Force Base, Washington, D.C. These documents are available for viewing at the USAF Radioisotope Committee Secretariat office. The USAF Radioisotope Committee Secretariat may be contacted by writing to AFMOA/SGPR, 110 Luke Ave, Room 405, Bolling AFB DC 20032-7050, DSN 297-4300, Commercial (202) 767-4300, or the Bolling AFB Command Post 202-767-4011; DSN 297-4011.

**SECTION 206 OF THE ENERGY REORGANIZATION ACT OF 1974****Notification to Commission of Noncompliance**

Any individual director, or responsible officer of a firm constructing, owning, operating, or supplying the components of any facility or activity that is licensed or otherwise regulated pursuant to the Atomic Energy Act of 1954 as amended (42 U.S.C. 2011 et seq.), or pursuant to this chapter, who obtains information reasonably indicating that such facility or activity or basic components supplied to such facility or activity -

(1) fails to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order, or license of the Commission relating to substantial safety hazards, or

(2) contains a defect that could create a substantial safety hazard, as defined by regulations that the Commission shall promulgate, shall immediately notify the Commission of such failure to

comply, of such defect, unless such person has actual knowledge that the Commission has been adequately informed of such defect or failure to comply.

- 
2. Enter the applicable permit number or numbers
  3. Enter the individual, organizational office symbol, address, and telephone extension

### **Penalty for failure to notify**

Any person who knowingly and consciously fails to provide the notice required by subsection (a) of this section shall be subject to a civil penalty in an amount equal to the amount provided by Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282).

### **Posting of requirements**

The requirements of this section shall be prominently posted on the premises of any facility licensed or otherwise regulated pursuant to the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.).

### **Inspection and enforcement**

The Commission is authorized to conduct such reasonable inspections and other enforcement activities as needed to insure compliance with the provisions of this section.

SOURCE (Pub. L. 93-438, Title II, Sec. 206, Oct. 11, 1974, 88 Stat. 1246.)

## Attachment 7

## SUMMARY OF RECORDS RETENTION REQUIREMENTS

**A7.1.** Refer to the applicable CFR and the *Air Force Records Disposition Schedule (RDS)* located at <https://afrims.amc.af.mil/> for records retention requirements. Use the longer period of retention if there is a difference between the CFR and RDS. This attachment serves as a general guideline for regulatory requirements. All records must remain legible throughout the retention period. Records must include all pertinent information, such as stamps, initials and signatures (10 CFR 20.2110). Archive all documents with the base safety office/environmental management office. Coordinate with AFMOA/SGPR on disposition of records requiring permanent archival storage at permit termination.

**Table A7.1. Record Retention Requirements**

Required record	Record Maintenance	Notes	CFR
Provisions of Radiation Protection Program	Until permit termination		10 CFR Part 20.2102(b)
Annual Audit, Reviews of Radiation Protection Program	3 years after record made		10 CFR Part 20.2102(b)
Surveys, Inventories and Calibrations	3 years after record is made		10 CFR Part 20.2103(a)
Leak Tests	3 years after test was conducted.		
External Dose Determination Surveys	Until permit termination	Must use rem, rad, Ci per 10 CFR Part 20.2101	10 CFR Part 20.2103 (b) 1
Internal Dose Determination Surveys	Until permit termination	Must use rem, rad, Ci per 10 CFR Part 20.2101	10 CFR Part 20.2103 (b) 2
Air Sampling, Surveys and Bioassay	Until permit termination	For respiratory protection program	10 CFR Part 20.2103 (b) 3
Effluent Dose Measurements and Calculations	Until permit termination		10 CFR Part 20.2103 (b) 4
NRC Form 4	Until permit termination	Dose estimate of prior occupational exposure	10 CFR Part 20.2104 (f)
Planned Special Exposures	Until permit termination		10 CFR Part 20.2105 (b)

<b>Required record</b>	<b>Record Maintenance</b>	<b>Notes</b>	<b>CFR</b>
Dosimetry Records	Until permit termination.	Includes DDE, SDE, LDE, embryo fetus and pregnancy declaration	10 CFR Part 20.2106
Demonstration of Dose Limits to Public	Until permit termination		10 CFR Part 20.2107
Accident and Incident reports and records	Permanent archival storage.		
Decommissioning Records	Until site released for unrestricted use. Permanent archival storage is required for large decommissioning efforts that are compliant with NUREG 1757, Vol 3.	Can transfer to new permit. Include records of spills, as built drawings, restricted areas, cost estimates, etc.	10 CFR 30.35 (g) 10 CFR 30.36 10 CFR 30.51
Receipt or Transfer of Permitted Material	As long as possessed, and three years after disposal or transfer	Unless otherwise specified.	10 CFR 30.51 (a) (1)(2)
Disposal of Permitted Material	Until permit termination or three years, whichever is longer.	Disposal records of significant magnitude or cost (e.g. site decommissioning wastes): Permanent Archival Record.	10 CFR Part 20.2108 10 CFR 30.51 (a)(3)
Records relating to the treatment and/or disposition of low level radioactive materials and Mixed waste	50 years	Prescribed retention period for specified environmental planning documents.	Rule 17 of the Air Force Records Disposition Schedule
Other records (not otherwise specified)	Until permit termination	If no specified retention	10 CFR Part 30.51(b)

<b>Required record</b>	<b>Record Maintenance</b>	<b>Notes</b>	<b>CFR</b>
The Permit of a Transferee (the organization receiving permitted material)	Prior to transfer of Radioactive Material	No specific retention after transfer given, possibly 3 yrs, see 10 CFR Part 30.51	10 CFR Part 30.41 (c) and (d)(1)
Sealed Source Leak Tests and On/Off Mechanism and Indicator	3 years after last leak check / mechanism check or till transfer or disposal	Removal, installation, shielding or containment	10 CFR Part 31.5 (c) (4) i. and ii.
Records of Shipment of Radioactive Material Shipped Under 10 CFR Part 71 Rules	3 years after shipment	Does not include Radioactive Material exemption under 10 CFR Part 71.10 (low level, such as less than type A)	10 CFR Part 71.91 (a)
Packaging Qualified Under 10 CFR Part 71 Certification	3 years after life of package	Packages under 10 CFR Part 71.85	10 CFR Part 71.91 ( c )
Material Purchased for Packages Conforms	Life of Package	Packages under 10 CFR Part 71	10 CFR Part 71.115(b)
Transportation Quality Assurance Records for Shipping	3 years past activity for which Transportation QA program written	Also 3 years after superceded	10 CFR Part 71.135
IP-1 Package Certification	1 year after last shipment		49 CFR Part 173.411(c)
7A Package Certification	1 year after shipment		49 CFR Part 173.415(a)
Records concerning historical radioactive waste sites	Until full remediation of site or 50 years from the time of generation		CERCLA (42 U.S.C. s/s 9601 et seq. (1980))

**Table A7.2. Medical Requirements**

<b>Required record</b>	<b>Record Maintenance</b>	<b>Notes</b>	<b>CFR</b>
Actions taken by licensee management	5 years		10 CFR 35.2024(a)

<b>Required record</b>	<b>Record Maintenance</b>	<b>Notes</b>	<b>CFR</b>
Duties and responsibilities of RSO	Duration of permit		10 CFR 35.2025(b)
Radiation protection program changes	5 years		10 CFR 35.2026
Written directives	3 years		10 CFR 35.2040
Procedures for administrations requiring written directives	Duration of permit		10 CFR 35.2041
Medical events	Duration of permit	Not specified in 10 CFR, but should be retained	
Calibrations of instruments used to measure activity of unsealed byproduct material	3 years		10 CFR 35.2060
Radiation survey instrument calibrations	3 years		10 CFR 35.2061
Dosages of unsealed byproduct material for medical use	3 years		10 CFR 35.2063(a)
Leak tests and inventory of sealed sources and brachytherapy sources	3 years	Decrease from old 10 CFR 35.	10 CFR 35.2067 (a) and (b)
Surveys of ambient radiation exposure rates where unsealed byproduct material was used or administered	3 years		10 CFR 35.2070
Basis for authorizing release of patients	3 years		10 CFR 35.2075(a)
Instructions provided to a breast-feeding female	3 years		10 CFR 35.2075(b)
Release of individuals containing unsealed byproduct material or implants containing byproduct material	3 years		10 CFR 35.2075(c)
Letters authorizing use of byproduct material a client's address for mobile services	3 years	After the last provision of service	10 CFR 35.2080(a)

<b>Required record</b>	<b>Record Maintenance</b>	<b>Notes</b>	<b>CFR</b>
Radiation surveys for mobile medical services	3 years		10 CFR 35.2080(b)
Decay-in-storage records	3 years		10 CFR 35.2092
Molybdenum-99 concentrations	3 years		10 CFR 35.2204
Safety instructions for the use of unsealed byproduct material requiring a written directive, manual brachytherapy; and remote afterloader, teletherapy, and gamma stereotactic radiosurgery units	3 years		10 CFR 35.2310
Records of surveys after brachytherapy source implant and removal	3 years		10 CFR 35.2404
Brachytherapy source accountability	3 years		10 CFR 35.2406(a)
Calibration measurements of brachytherapy sources	3 years		10 CFR 35.2432(a)
Records concerning remote afterloaders, teletherapy, and gamma stereotactic radiosurgery units	3 years till duration of permit	Unique record keeping requirements for these therapy modalities	Review 10 CFR 35.2600 Series for records requirements



## Attachment 8

## INCREASED CONTROLS AND PROTECTION OF INFORMATION

**A8.1.** Permittees in possession of material exceeding **Table A8.1** quantities are required to comply with additional precautions for managing information that pertains to their permitted material, to include its storage and transport. Permittees shall implement the guidance provided in NRC regulatory issue summary 2005-31, *Control of Security-Related Sensitive Unclassified Non-safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation for the Use of Source, Byproduct, and Special Nuclear Material*, available at: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/>.

**Table A8.1. Radionuclide Screening Threshold Values**

Radionuclide	Threshold Values <sup>1</sup> (TBq)	Threshold Values <sup>2</sup> (Ci)
Am-241	0.06	1.6
Am-241/Be	0.06	1.6
Cf-252	0.02	0.54
Cm-244	0.05	1.4
Co-60	0.03	0.81
Cs-137	0.1	2.7
Gd-153	1	27
Ir-192	0.08	2.2
Pm-147	40	1100
Pu-238	0.06	1.6
Pu-239/Be	0.06	1.6
Ra-226	0.407	11
Se-75	0.2	5.4
Sr-90 (Y-90)	1	27
Tm-170	20	540
Yb-169	0.3	8.1
Combinations of radioactive materials listed above <sup>3</sup>	See Footnote Below <sup>4</sup>	

<sup>1</sup> The aggregate activity of multiple, collocated sources should be included when the total activity exceeds the quantity of concern.

<sup>2</sup> TBq values are the regulatory standard and the Curie values are rounded to two significant

figures.

<sup>3</sup>Radioactive materials are to be considered collocated if breaching a common physical security barrier (e.g. a locked door at the entrance to a storage room) would allow access to the radioactive material or devices containing the radioactive material. For sources installed in devices, each device should be considered a separate location.

<sup>4</sup> If several radionuclides are aggregated, the sum of the ratios of the activity of each source, I of radionuclide, n, A(i,n), to the quantity of concern for radionuclide n, Q(n), listed for that radionuclide exceeds one. [(aggregated source activity for radionuclide A) ~ (quantity of concern for radionuclide A)] + [(aggregated source activity for radionuclide B) ~ (quantity of concern for radionuclide B)] + etc..... >1

**A8.2.** Permittees possessing or who require to possess material quantities exceeding the amounts in **Table A8.2** (or aggregation of material such that the quantity exceeds **Table A8.2**) are required to implement increased controls for both these sources and certain information related to these sources. Permittees shall coordinate directly with AFMOA/SGPR (the RIC Secretariat) for increased control requirements.

A8.2.1. Additional requirements are also imposed for permittees who desire to transport material quantities in excess of 100 times **Table A8.2** quantities. Permittees shall coordinate directly with AFMOA/SGPR at least 120 days prior to moving material that exceeds these levels.

**Table A8.2. Radionuclide Quantities of Concern**

Radionuclide	Quantity of Concern <sup>1</sup> (TBq)	Quantity of Concern <sup>2</sup> (Ci)
Am-241	0.6	16
Am-241/Be	0.6	16
Cf-252	0.2	5.4
Cm-244	0.5	14
Co-60	0.3	8.1
Cs-137	1	27
Gd-153	10	270
Ir-192	0.8	22
Pm-147	400	11000
Pu-238	0.6	16
Pu-239/Be	0.6	16
Se-75	2	54
Sr-90 (Y-90)	10	270

Radionuclide	Quantity of Concern <sup>1</sup> (TBq)	Quantity of Concern <sup>2</sup> (Ci)
Tm-170	200	5400
Yb-169	3	81
Combinations of radioactive materials listed above <sup>3</sup>	See Footnote Below <sup>4</sup>	

<sup>1</sup> The aggregate activity of multiple, collocated sources should be included when the total activity exceeds the quantity of concern.

<sup>2</sup> TBq values are the regulatory standard and the Curie values are rounded to two significant figures.

<sup>3</sup> Radioactive materials are to be considered collocated if breaching a common physical security barrier (e.g. a locked door at the entrance to a storage room) would allow access to the radioactive material or devices containing the radioactive material. For sources installed in devices, each device should be considered a separate location.

<sup>4</sup> If several radionuclides are aggregated, the sum of the ratios of the activity of each source, I of radionuclide, n, A(i,n), to the quantity of concern for radionuclide n, Q(n), listed for that radionuclide exceeds one. [(aggregated source activity for radionuclide A) ~ (quantity of concern for radionuclide A)] + [(aggregated source activity for radionuclide B) ~ (quantity of concern for radionuclide B)] + etc.... >1

**Attachment 9****MANAGING RADIOACTIVE WASTE SITES****A9.1. AFMOA/SGPR will:**

A9.1.1. Conduct historical search of documents upon request, maintained by AFMOA/SGPR, pertaining to potential Radioactive Waste Sites (RWSs).

A9.1.2. Issue "possession only" permits for those registered sites that are either confirmed to have material contamination or will require intrusive investigation to identify scope of contamination, with the exception of sites containing only 91(a) or 91(b) material.

A9.1.3. Act as a consultant for the Remediation Project Manager (RPM) for engaging with and addressing regulatory authority issues.

A9.1.4. Review and approve decommissioning plans, final status surveys, site-specific safety and health plans.

A9.1.5. Conduct site visits before and during remediation and the final status survey, if applicable, to ensure compliance with approved decommissioning procedures.

A9.1.6. Advise the Air Force Inspection Agency on inspection protocol for each AF-permitted RWS.

A9.1.7. Terminate *possession only* permits for those sites that satisfy unrestricted release criteria, in accordance with 10 CFR 20.1402.

**A9.2. AFSC/SEW will:**

A9.2.1. Conduct historical search of documents upon request maintained by the Air Force Safety Center pertaining to potential RWS containing 91(a) or 91(b) material.

A9.2.2. Issue possession only permits for those registered sites that are either confirmed to have 91(a) or 91(b) material contamination or will require intrusive investigation to identify scope of contamination.

A9.2.3. Provide weapons related information, as required, to assist the RPM, AFIOH/SDR and AFMOA/SGPR in determining the isotopes present at a 91(b) site and act as a consultant for the RPM for engaging with and addressing regulatory authority issues.

A9.2.4. Review and approve decommissioning plans, final status surveys, site-specific safety and health plans.

A9.2.5. Conduct site visits before and during remediation and the final status survey, if applicable, to ensure compliance with approved decommissioning procedures.

A9.2.6. Terminate possession-only permits for those sites that satisfy unrestricted release criteria.

**A9.3. AF/A7CV will:**

A9.3.1. Maintain and manage the AF Radioactive Waste Site Registry that is an identification and tracking database of all suspected and confirmed AF RWS.

A9.3.1.1. Present RWS Area of Concern (AOC) documentation to AFMOA/SGPR for review and validation.

A9.3.1.2. Will register RWS AOC data, upon AFMOA/SGPR approval, into the AF Radioactive Waste Registry.

**A9.4. The Air Force Center for Environmental Excellence (AFCEE) will:**

Confirm with USAF/A7CVR or AFSC/SEW the registration of the site in the AF Radioactive Waste Site Registry projects involving the remediation of known or suspected RWSs, and confirm with AFMOA/SGPR the status of permitting requirements. In addition, AFIOH/SDR must be consulted regarding the selection of a qualified, licensed contractor to perform the required work and waste disposal procedures and requirements.

**A9.5. AFIOH/SDR will:**

A9.5.1. Consult with the RPM in evaluating information pertaining to a suspected RWS AOC.

A9.5.1.1. Will search historical records and coordinate with AFMOA/SGPR and AFSC/SEW for data collection and information validation.

A9.5.1.2. Will assess potential source terms and conduct a preliminary risk assessment to assist with a relative risk determination.

A9.5.2. Provide technical consultation and expert remediation guidance to the RPM.

A9.5.3. Provide guidance to the RPM and the Service Center (e.g. AFCEE) in selecting a qualified, licensed contractor for conducting required remediation activities.

A9.5.4. Assist RPM, Installation Judge Advocate General, and AFMOA/SGPR in determining cleanup levels and regulatory requirements.

A9.5.5. Conduct scoping surveys of suspected RWS AOCs as requested by the installation RSO.

A9.5.6. Coordinate all installation-level actions, analysis, reports and recommendations with the installation RSO.

A9.5.7. Act as technical consultant to AFMOA/SGPR, the RIC and AFSC/SEW.

A9.5.7.1. Provide technical review for all remediation plans, decommissioning plans, and final status surveys and provide recommendation of approval or disapproval to AFMOA/SGPR.

A9.5.7.2. Provide a quality assurance function to the Remedial Action and Final Status Survey process (e.g. review of plan requirements, data quality review, adequacy of work, and review of findings).

A9.5.7.2.1. Provide quality assurance sample analysis, (e.g. 10% splits, duplicates and spikes) and confirmatory survey analysis for any contracted remedial action.

**A9.6. The Base Civil Engineer will:**

A9.6.1. Contact the installation RSO upon the discovery or knowledge of a location that may contain radioactive waste (see [Figure A9.1](#)).

A9.6.2. Ensure all areas of concern, to include permitted sites, are identified in Tab C-1 of the Installation Master Plan and that the site is not disturbed until a proper assessment is performed.

A9.6.3. Ensure that confirmed or suspected RWS that present a health or environmental risk have:

A9.6.3.1. Site access limited with a strong physical barrier such as a chain link fence or other measures, to prevent exposure of individuals to radioactive material. An inspection of physical barriers shall be conducted annually.

A9.6.3.2. Post site boundaries for each accessible side with radioactive material warning signs stating that the site contains buried radioactive materials. Ensure the signs are properly maintained (condition, visibility and legibility). Inspection of signs shall be conducted annually. Design and display shall be IAW 10 CFR 20.

A9.6.3.3. Protect the soil surface against erosion using grasses or other ground covers (such as stone or gravel) to maintain site stability. Keep the site clear of deep-rooted shrubs and trees.

A9.6.4. Ensure no RWS is removed from the Installation Master Plan, transferred, released, or disregarded as a RWS until approved by AFMOA/SGPR.

**A9.7. The Remediation Project Manager (RPM) will:**

A9.7.1. Serve as the responsible agent for the overall management and execution of a RWS remediation project. The RPM will usually be a member of the installation environmental management office. **Figure A9.1 and Figure A9.2.**

A9.7.2. Ensure a suspected area of concern is registered through their chain of command with the RWS registry maintained by AF/A7CV.

A9.7.3. Contact the installation RSO to request assistance from AFIOH/SDR in conducting a scoping survey of a suspected RWS AOC.

A9.7.4. Develop and submit application for a possession-only permit to the installation RSO once a registered site is identified as positive for radioactive waste or before intrusive investigation commences. **Figure A9.1.**

A9.7.5. In conjunction with the installation RSO:

A9.7.5.1. Consult with AFIOH/SDR for assistance in selecting a qualified contractor.

A9.7.5.2. Consults with AFIOH/SDR, AFMOA/SGPR, and regulatory agencies in selecting appropriate cleanup levels for remediation.

A9.7.5.3. Request technical assistance from AFIOH/SDR in developing and executing decommissioning plans, site safety and health plans, and final status surveys.

A9.7.6. Apply MARSSIM survey methodologies in developing all investigation and remediation work plans.

A9.7.7. Submit for review and approval, decommissioning plans, site safety and health plans, and final status surveys to the installation RSO who in turn submits them to AFMOA/SGPR.

A9.7.8. Contacts the installation RSO to ensure that Installation Restoration Program eligible sites are entered in the AFRIMS database.

**A9.8. The Installation Radiation Safety Officer (RSO) will:**

A9.8.1. Advise the Civil Engineer, RPM, Commanders, and other base personnel on identification and remediation of potential public and occupational health risks associated with suspected or confirmed contaminated sites.

A9.8.2. Serve as the interface between the installation and AFMOA/SGPR, AFSC/SEW and AFIOH/ SDR for all radiation related issues. When requested by the RPM, contacts AFIOH/SDR and AFMOA/SGPR for technical assistance in developing decommissioning plans, remediation work site safety and health plans, and final status surveys.

A9.8.3. Submit application for a possession-only permit to AFMOA/SGPR once a registered site is identified as positive for radioactive waste or before intrusive investigation commences (see [Figure A9.1](#)).

A9.8.4. Consult with AFIOH/SDR for assistance in selecting a qualified contractor.

A9.8.5. Review decommissioning plans, remediation work site safety and health plans, and final status surveys for the installation and submit them to AFMOA/SGPR for approval. Assures appropriate health physics oversight of the effort.

A9.8.6. Conduct annual surveys of radioactive waste sites to include:

A9.8.6.1. Visual inspection of the integrity of pipe caps or other closure devices that extend above ground.

A9.8.6.2. Conducts radiation surveys if there is an indication of intrusion or damage to the site.

A9.8.6.3. Ensure that fencing, security devices, and signage are in good order.

A9.8.7. Report a release or exposure to radioactive material in accordance with section [3.12](#) of this instruction.

**A9.9. The Air Force Inspection Agency will:**

A9.9.1. Inspect, as appropriate, sites permitted for either *possession only* or for decommissioning. If no permit has been issued, then no inspection by AFIA/SG is required.

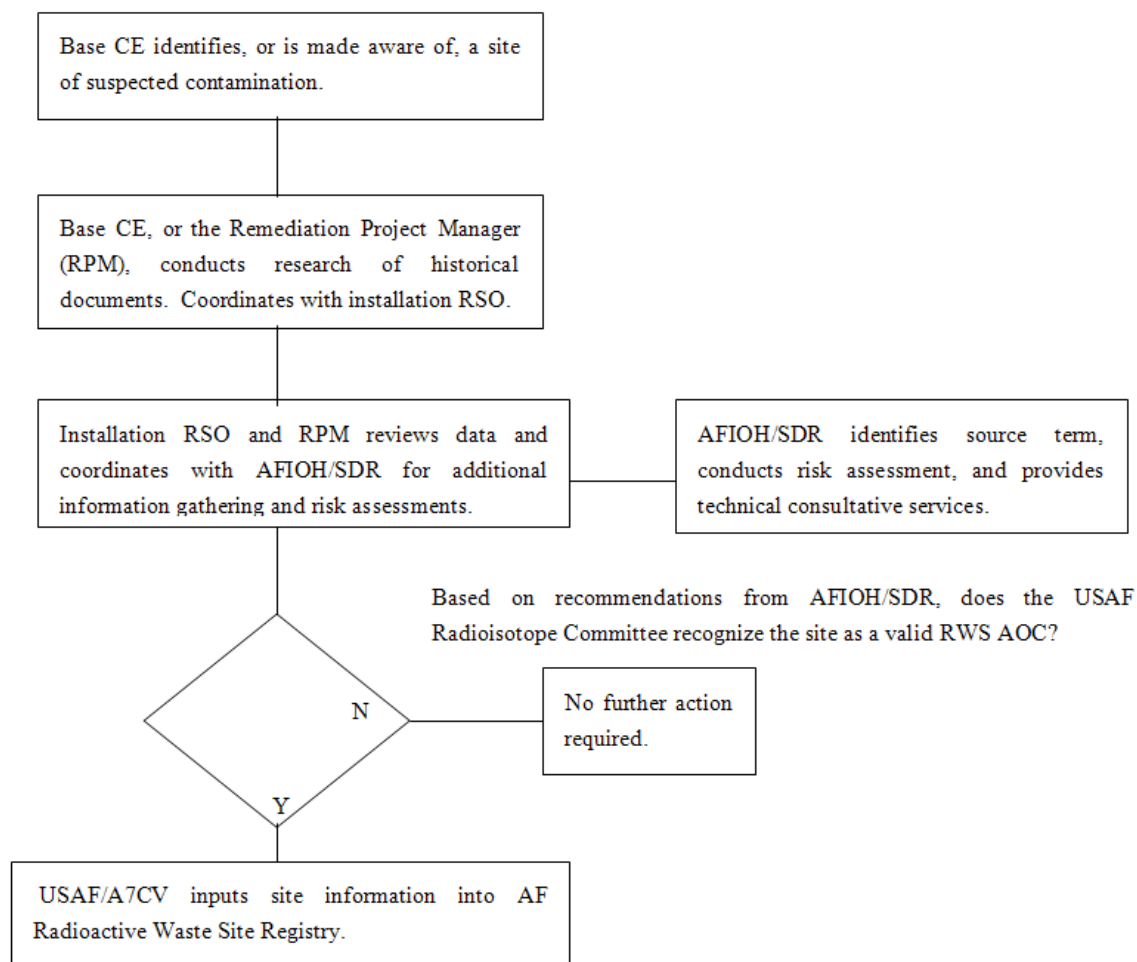
A9.9.2. Will only inspect sites containing only 91(a) or 91(b) material as regulated by the AFSC upon request.

**A9.10. The Installation Judge Advocate General will:**

A9.10.1. Assist the RPM, AFIOH/SDR, and AFMOA/SGPR in determining the legislative jurisdiction of contaminated sites where contractors will be performing work under their own (NRC or, as appropriate, agreement-state) license.

A9.10.2. Assist the RPM, AFIOH/SDR, and AFMOA/SGPR in determining cleanup levels and regulatory requirements.



**Figure A9.1. Site Registration and Possession-Only Permit Issuance.**

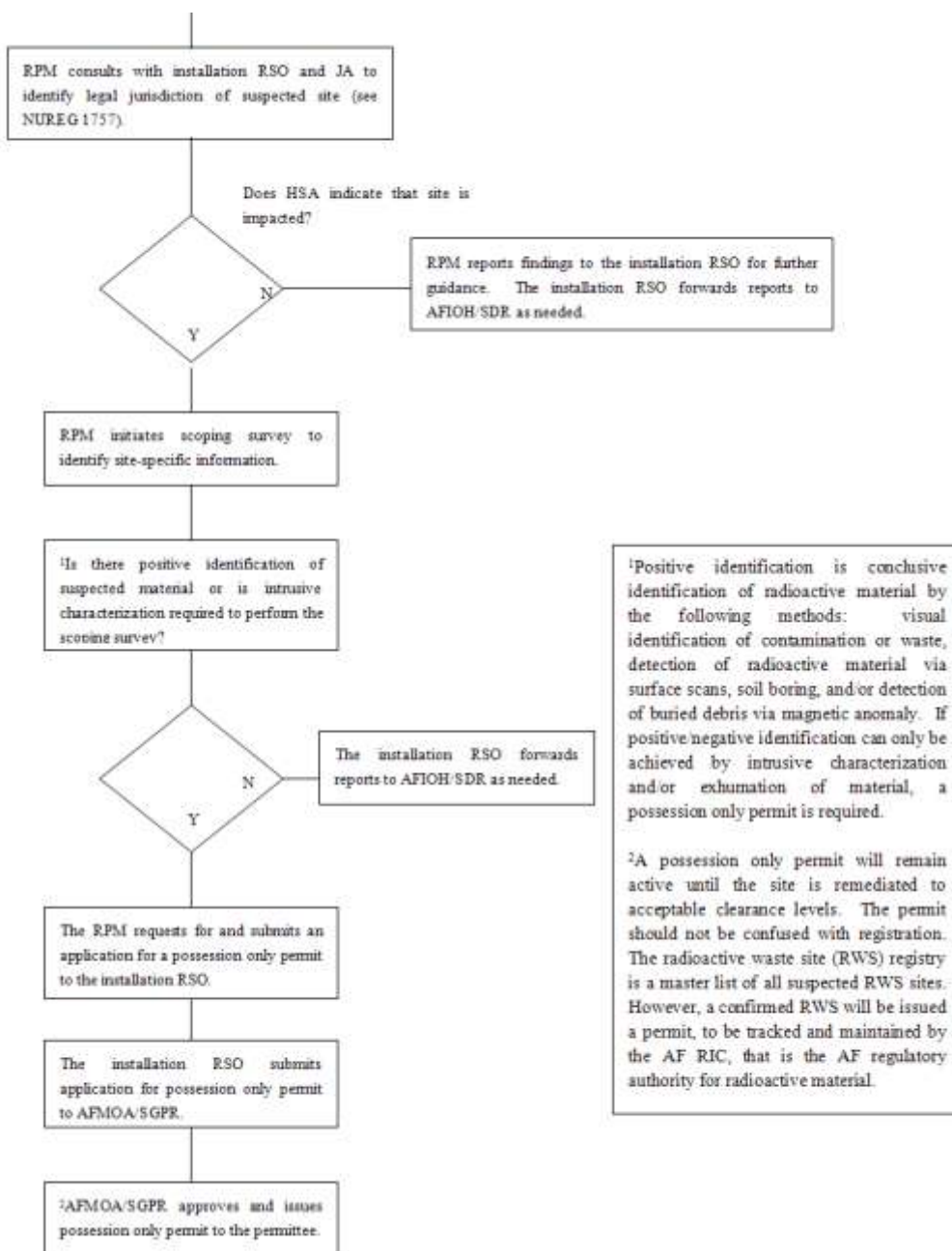
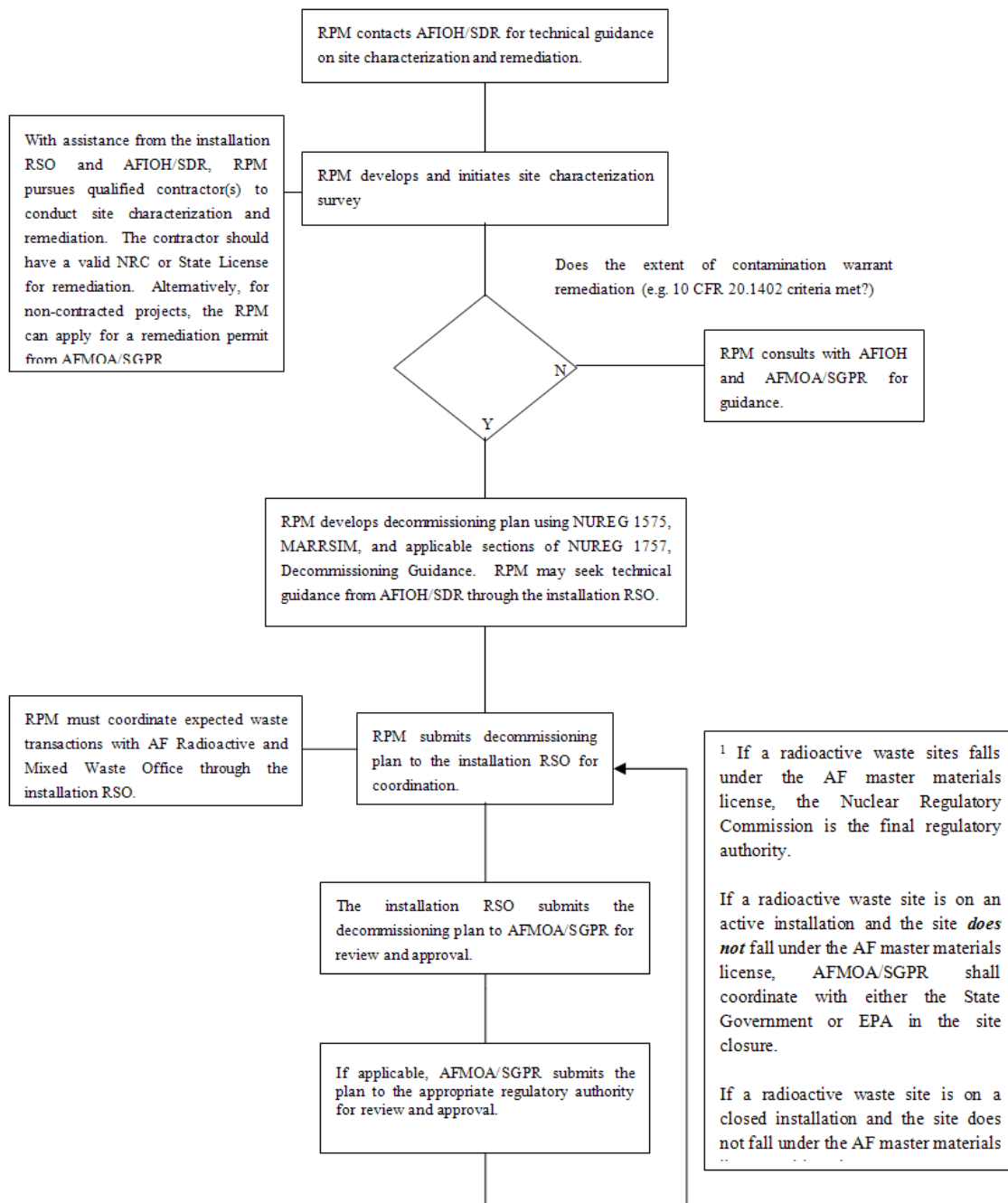
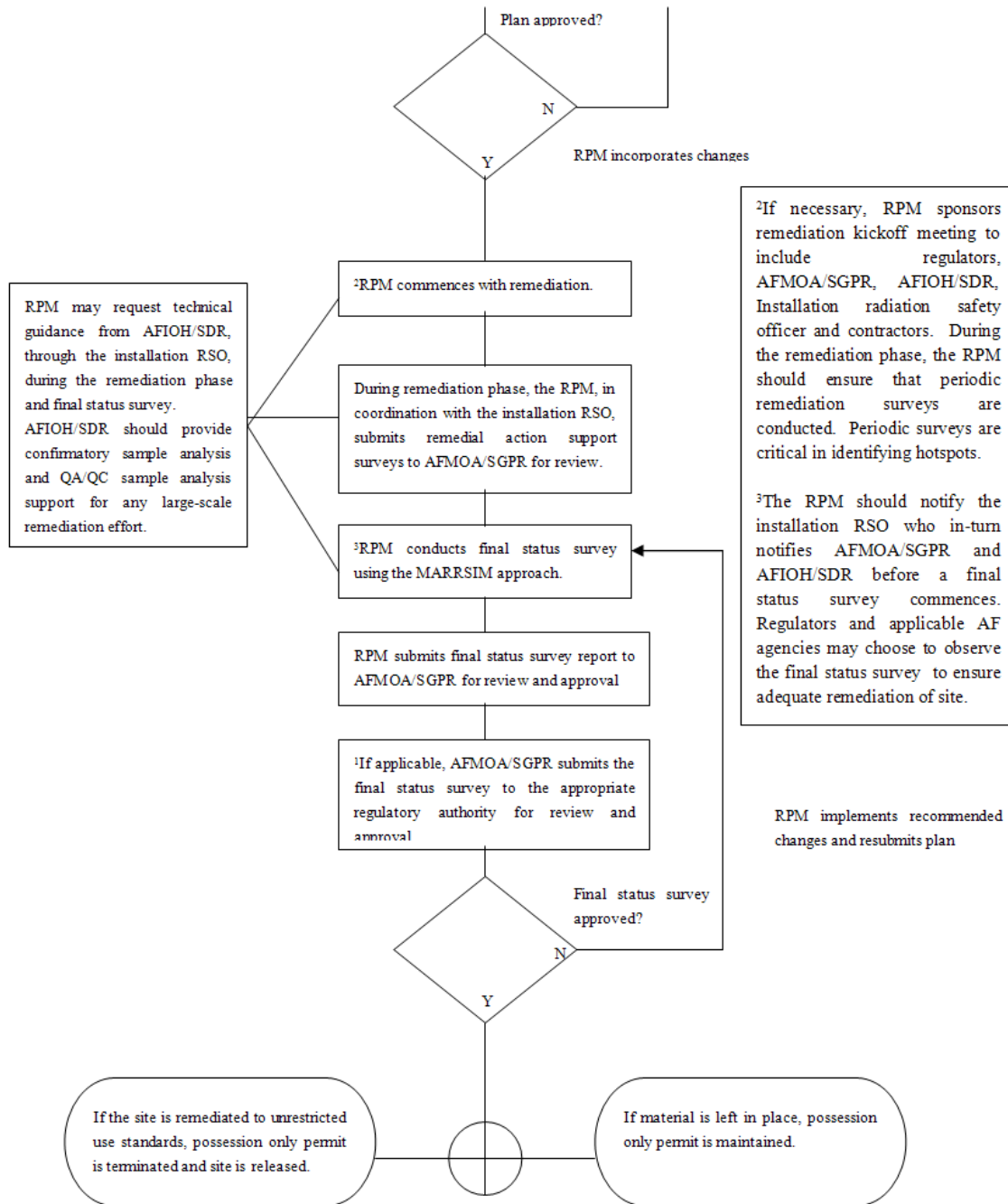


Figure A9.2. Site Characterization, Remediation and Property Release





## Attachment 10

## MANAGING AND DISPOSING OF RADIOACTIVE WASTE

## A10.1. Requirements for Waste-Generating Activities.

A10.1.1. Control access to laboratories or rooms where radioactive wastes are generated or stored (storage area must provide sufficient protection to prevent degradation of packaging or the waste) when they are vacant or unattended.

A10.1.2. Maintain a log on information about radioactive materials placed into radioactive waste containers and record radiation levels. The log shall include:

A10.1.2.1. Name of the installation.

A10.1.2.2. The building and number of the room containing radioactive waste containers.

A10.1.2.3. The types of containers and the identification number assigned to each container.

A10.1.2.4. The date items were placed in the container.

A10.1.2.5. A description of items placed in each container. Stock listed items shall contain a record each item's name and stock number. Sealed sources shall contain a record of the manufacturer; date manufactured, model, and serial number, if available. Identify other articles by their common names, for example, contaminated gloves, rags, and paper chucks.

A10.1.2.6. The radionuclide(s) contained in the item.

A10.1.2.7. The known or estimated radioactivity in Curie units. Do not abbreviate unit prefixes. Spell out prefixes such as micro and milli.

A10.1.2.8. The physical form of each radionuclide, for example, gas, solid, or liquid. **NOTE:** Do not treat radioactive waste by absorption of liquids, solidification of liquids or any other procedures that is designated for burial unless approval is obtained from the Air Force Radioactive and Mixed Waste Office (see [A10.4](#)).

A10.1.2.9. The chemical form of each radionuclide, for example, oxide, chloride, and the chemical name of the labeled compound.

A10.1.2.10. The name and initials of the individual making the entry.

A10.1.2.11. Meter readings in millirem or milliSievert per hour (mrem/hr or mSv/hr) measured outside the containers.

A10.1.2.12. The name and initials of the individual conducting the survey.

A10.1.3. The Permit RSO will survey radioactive waste storage areas periodically to ensure compliance with 10 CFR 20 and document the results.

A10.1.4. Maintain records of all disposals of radioactive waste for the duration of the permit.

A10.1.5. Before sealing a waste container, the permit RSO must:

A10.1.5.1. Verify for each waste container, the legibility and completeness of each waste entry, and visually inspect the containerized waste. To prevent contamination of personnel or the area, do not physically remove or handle the waste from the container.

A10.1.5.2. Survey the container to ensure that detected radiation levels correspond to the entries recorded in the waste log. **NOTE:** A container storing a low-energy beta emitters or small quantities of a low-energy gamma emitter (e.g. iodine-125) would not have high levels of x or gamma radiation. Gamma surveys shall be conducted on these containers to ensure that high energy gamma emitting sources were not improperly placed in the container or that Bremsstrahlung radiation is not being produced at significant levels to cause a potential hazard.

A10.1.5.3. The permit RSO must secure the waste and records and investigate to resolve discrepancies if observations or measurements give unusual results.

A10.1.6. Close and seal the plastic bag or container for transfer and disposal after the RSO's audit. The permit RSO must coordinate all disposals with the installation RSO.

#### **A10.2. Requirements and Rules for Storage of Radioactive Waste Containers.**

A10.2.1. Long-term storage is not endorsed, and should be avoided. In general, store wastes for no longer than one year.

A10.2.2. Permit RSOs must maintain a listing of all sealed radioactive waste storage containers and account for and inspect semiannually the integrity of each container. A record of the inspection shall be maintained for three years.

A10.2.3. A copy of the waste inventory sheet must be attached to each waste container held in long-term storage.

A10.2.4. Do not open waste containers to conduct periodic inspections.

A10.2.5. Ensure storage areas are properly ventilated prior to survey.

A10.2.6. The RSO shall conduct a final inspection of radioactive waste containers for integrity of the container and container seal; accuracy and completeness of log entries; proper markings and labels; and perform required surveys prior to removing the containers for transfer or disposal.

A10.2.7. The permit RSO will file inventory sheets and waste logs in the RSO's permanent records of the permit authorizing long-term storage of the waste after disposal or transfer of each waste container.

A10.2.8. Do not store liquid waste more than one year. Solidify the waste with the help of Radioactive and Mixed Waste Office.

**A10.3. Disposal by Decay-in-Storage:** Permittees authorized to dispose by decay-in-storage will comply with the record keeping requirements prescribed in 10 CFR 35.92(b).

#### **A10.4. Disposal by Burial or Recycling**

A10.4.1. All requests for disposal by burial will be in writing to the Air Force Radioactive and Mixed Waste Office (AFRMWO). Requests for recycling will be made in writing to 88 ABW/CEV. Written requests shall include the following information:

A10.4.1.1. National Stock Number or part number and manufacturer's name or code of the radioactive source, if applicable.

A10.4.1.2. Nomenclature (e.g. Lensatic compass, tube assembly, test sample, etc.)

A10.4.1.3. Quantity of each item or amount of waste in terms of cubic feet.

A10.4.1.4. Radionuclide(s).

A10.4.1.5. Physical Form (e.g. solid, liquid, gas) to include any known hazardous waste constituents.

A10.4.1.6. Chemical form.

A10.4.1.7. Radioactivity, estimated radioactivity, per item and total radioactivity in milliCuries and in Becquerels for each container.

A10.4.1.8. Radiation exposure rate in millirem per hour (milliSievert per hour) at 4 inches from surface of unpackaged item (for items only).

A10.4.2. Overseas installations are authorized to dispose of waste in the host country where they are geographical located and to the extent that such disposal is in compliance with existing host country regulations and agreements and has been approved by the cognizant host nation authority and AFMOA/SGPR.

#### **A10.5. Exempt Quantity Item Disposal**

A10.5.1. Electron tubes and spark gaps containing radioactive material can be disposed of as normal trash providing the following conditions are satisfied:

A10.5.1.1. Store electron tubes or spark gaps in a way that will prevent breakage. Each tube or spark gap contains less than the quantities of radioactive materials listed in 10 CFR 30.15 (do not accumulate exempt quantities) or does not contain more than the exempt quantity of naturally occurring or accelerator produced (NARM) materials specified in [Attachment 2](#) and,

A10.5.1.2. The levels of radiation from each electron tube or spark gap does not exceed 1 milliroentgen per hour on contact when measured with a proper radiation detection instrument and,

A10.5.1.3. Disposal is allowed by the host, state or country.



## Attachment 11

## REPORTING CRITERIA

**A11.1. Report Immediately (not later than three hours after discovery) to the RICS.** Call the RICS at DSN 425-0035 or 703-588-0035, or the Bolling AFB Command Post at DSN 297-4011 or 202-767-4011 and ask for the AFMSA/SG3PB duty officer.

A11.1.1. Loss of control of radioactive material that could cause a hazard to life or health.

A11.1.2. Uncontrolled nuclear reactor criticality resulting in damage to the reactor core or release of fission products from the reactor core to the atmosphere or surrounding environment.

A11.1.3. Accidental rupture of a radioisotope power system containment capsule or a reactor fuel element.

A11.1.4. Any event, such as fire, explosion, or toxic gas release, involving radioactive material that requires immediate protective actions to avoid exposures to radiation or radioactive material, or to avoid releases of licensed or permitted material, above regulatory limits.

A11.1.5. Any event that causes, or threatens to cause:

A11.1.5.1. An individual to receive dose equivalents at or above those listed in 10 CFR 20.2202, *Notification of Incidents*, paragraph (a)(1),

A11.1.5.2. The release of radioactive material as described in 10 CFR 20.2202(a)(2).

A11.1.5.3. Receiving any package of radioactive material that exceeds limits specified by 10 CFR 20.1906, *Procedures for Receiving and Opening Packages*, paragraph (d).

A11.1.6. Any spill or unplanned release of radioactive material resulting in exposure to unprotected or inadequately protected individuals that could exceed the limits of 10 CFR 20, Subpart C, paragraphs 1201, 1207 and 1208 and 10 CFR 20, Subpart D, paragraph 1301. When in doubt, report.

A11.1.7. Permitted or licensed radioactive materials or sources lost, stolen, or otherwise missing from its authorized storage and/ or use location.

A11.1.8. Any unexpected event involving radioactive material or radiation exposure deemed serious enough to warrant the interest or action of non-Air Force officials or agencies. This includes:

A11.1.8.1. Events having domestic or international implications,

A11.1.8.2. Events that may cause inquiries by the public or press,

A11.1.8.3. Events requiring immediate notification to the NRC.

A11.1.9. Any event involving a nuclear reactor, radioisotope power system or minor radioactive source (as defined in AFI 91-204, *Safety Investigations and Reports*), including any premature release of information, that may result in adverse public reaction.

A11.1.10. Any attempted or successful attempt to sabotage or steal radioactive material exceeding NRC quantities of concern. **NOTE: The three-hour rule does not apply – report immediately.**

A11.1.11. Releases of a “reportable quantity” of a CERCLA hazardous substance leaving an installation. Report immediately to the National Response Center by calling (800) 424-8802. CERCLA reportable releases of radionuclides must also be reported immediately to the appropriate State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) as required by Executive Order 13,016. **NOTE: The three-hour rule does not apply – report immediately.**

**A11.2. Report Within 12 Hours to RIC Secretariat at Cell: 703-340-0819, or the Duty 202-767-4300; DSN 297-4300, or the Bolling AFB Command Post 202-767-4011; DSN 297-4011:**

A11.2.1. Any medical event that meets the criteria in 10 CFR 35.3045, *Report and Notification of a Medical Event*, part (a)

A11.2.1.1. See 10 CFR 35.3045, specifically part (e)

A11.2.1.2. Provide the patient with medical assistance and care as necessary. Do not delay medical assistance for any reason.

A11.2.2. Any dose to an embryo/fetus that meets the criteria of 10 CFR 35.3047, *Report and Notification of a Dose to an Embryo/Fetus or a Nursing Child*, part (a).

A11.2.3. Any dose to a nursing child that meets the criteria of 10 CFR 35.3047, part (b).

**A11.3. Report Within 24 Hours to RIC Secretariat at Cell 703-340-0819, or the Duty 202-767-4300; DSN 297-4300, or the Bolling AFB Command Post 202-767-4011; DSN 297-4011:**

A11.3.1. Any event that causes, or threatens to cause:

A11.3.1.1. An individual to receive dose equivalents at, or above, those listed in 10 CFR 20.2202, *Notification of Incidents*, part (b)(1) or

A11.3.1.2. The release of radioactive material as described in 10 CFR 20.2202, part (b)(2).

A11.3.2. Any unplanned contamination event that meets these three criteria:

A11.3.2.1. Requires restricting worker or public access to the contaminated area for more than 24 hours by imposing added radiological controls or by prohibiting entry to the area.

A11.3.2.2. Requires restricting access to the area for a reason other than to allow radioisotopes with a half-life of less than 24 hours to decay before decontamination.

A11.3.2.3. Involves a quantity of radioactive material greater than 5 times the lowest annual limit on intake specified in Appendix B of 10 CFR 20.1001-20.2401.

A11.3.3. Any disabling or failure of equipment that is required to be operational when it fails and no redundant equipment is operational, when the equipment is required by regulation, license, or permit to:

A11.3.3.1. Prevent release of radioactive material.

A11.3.3.2. Prevent exposure to persons.

A11.3.3.3. Mitigate the consequences of an incident.

A11.3.4. Any event that requires unplanned medical treatment at a medical facility of individuals with radioactive contamination on their clothing or body.

A11.3.5. An unplanned fire or explosion that causes damage in an amount of licensed or permitted material exceeding five times the lowest annual limit on intake as specified in Appendix B of 10 CFR 20.1001-20.2401 or any device, container, or equipment containing such materials.

A11.3.6. Any of these events involving irradiator facilities under the purview of 10 CFR 36, *Licenses and Radiation Safety Requirements for Irradiators*:

A11.3.6.1. A source stuck in an unshielded position.

A11.3.6.2. Any fire or explosion in a radiation room.

A11.3.6.3. Damage to the source racks.

A11.3.6.4. Failure of cable or drive mechanisms used to move the source or source racks.

A11.3.6.5. Failure of access control systems.

A11.3.6.6. Radiation sources detected by the product exit monitor.

A11.3.6.7. Radioactive material contamination.

A11.3.6.8. Structural damage to the pool liner or walls.

A11.3.6.9. Abnormal water loss or leakage from the source storage pool.

A11.3.6.10. Pool water conductivity exceeding 100 microSiemens per centimeter.

#### **A11.4. Report Within 1 Duty Day to RIC Secretariat:**

A11.4.1. Discovery of any radioactive material that the permit or installation RSO cannot identify as an exempt quantity or otherwise not requiring a permit according to [paragraph 3.3.2](#) of this instruction.

A11.4.2. Any defect in, or damage to, a radioactive source or device that presents a potential hazard to personnel or the environment. Defects include sealed sources with leak test results above 0.005 microCuries.

#### **A11.5. Report Within 4 Duty Days to RIC Secretariat:**

A11.5.1. Any defect or failure to comply as defined in 10 CFR 21.21, *Notification of Failure to Comply or Existence of a Defect and Its Evaluation*.

A11.5.2. Any leak test required by 10 CFR 35.67 detecting the presence of 0.005 microCuries removable contamination in accordance with 10 CFR 35.3067.

#### **A11.6. Report within 13 Days to RIC Secretariat.**

A11.6.1. A written report of medical events in accordance with 10 CFR 35.3045, *Report and Notification of a Medical Event*. The report must include:

A11.6.1.1. The permittee's name, organization, installation, and other identification.

A11.6.1.2. The physician's name prescribing the treatment, a brief description of the event, why the event occurred, and the effects, if any, on the patient who received the administration.

A11.6.1.3. What actions, if any, have been or are planned to be taken to prevent recurrence.

A11.6.1.4. Whether you disclosed to the patient and/or the responsible relative or guardian for the patient; and what you told them. If you withheld disclosure of this information, explain why.

A11.6.1.5. Do not include the patient's name in the report or other information that would cause the identify of the patient to be revealed.

A11.6.1.6. Patients that have been informed of the medical event must be provided with a copy of the 15-day report or a brief written description of the event and the consequences within 15 calendar days.

A11.6.2. A written report of doses to an embryo, fetus or nursing child in accordance with 10 CFR 35.3047, *Report and Notification of a Dose to an Embryo/Fetus or a Nursing Child*.

#### **A11.7. Report Within 25 Calendar Days to RIC Secretariat:**

A11.7.1. Any event that takes place during industrial radiography such that:

A11.7.1.1. The source assembly is unintentionally disconnected from the control cable.

A11.7.1.2. The source assembly does not retract and secure in the fully shielded position.

A11.7.1.3. Any part critical to the safe operation of the radiography device fails to work properly.

A11.7.1.4. When reporting these events, include all information listed in 10 CFR 34.101, *Notifications*, paragraphs (b)(1) through (7).

A11.7.2. Any incident that involves:

A11.7.2.1. Doses to adult or minor workers that exceed the occupational dose limits in 10 CFR 20.1201, *Occupational Dose Limits for Adults* or 10 CFR 20.1207, *Occupational Dose Limits for Minors* respectively.

A11.7.2.2. Doses to a declared pregnant worker that exceed the limits for a fetus in 10 CFR 20.1208, *Dose to an Embryo/Fetus*.

A11.7.2.3. Doses to a member of the public that exceed the limits in 10 CFR 20.1301, *Dose Limits for Individual Members of the Public*.

A11.7.2.4. Doses to any person that exceeds any applicable limits in the permit.

A11.7.2.5. Levels of radiation or concentrations of radioactive material in:

A11.7.2.5.1. A restricted area, if levels exceed any applicable limits in the permit.

A11.7.2.5.2. An unrestricted area, if levels exceed 10 times any applicable limit in 10 CFR 20 or the permit, even if people are not exposed.

A11.7.2.6. Levels of radiation or releases of radioactive material that exceed the EPA environmental radiation standards in 40 CFR 190, *Uranium Fuel Cycle Standard* or

permit conditions related to those standards. **NOTE:** This applies only to permittees subject to 40 CFR 190.

A11.7.2.7. A report must include all information listed in 10 CFR 20.2203, *Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Materials Exceeding the Limits*, paragraphs (b)(1) and (2).

A11.7.3. A written follow-up report to any incident described in [A11.1.5](#), or [A11.3.1](#) to [A11.3.5](#)

A11.7.4. Any event that causes a significant reduction in the effectiveness of any authorized shipping packaging during use. Give details of the defects and their safety significance. Explain how you repaired the defects and plan to prevent their recurrence.

**A11.8. Report Within 30 Calendar Days to the RIC Secretariat and NRC (Director of Nuclear Material Safety and Safeguards, ATTN: GLTS, US. NRC, Washington DC, 20555-0001):**

A11.8.1. Upon transfer of a generally licensed item to a specific licensee, a report of the transfer to include the recipient's license number, the serial number of the unit, and the date of transfer in addition to the current reporting requirements.

A11.8.2. Upon transfer of a generally licensed device to another general licensee (only when the device remains in place) in accordance with 10 CFR 31.5(c)(9), and providing a report of the transfer in accordance with 10 CFR 31.5 (c)(9)(i).

A11.8.3. Upon finding removable contamination in excess of 0.005 microCuries or failure of or damage to a generally licensed device likely to results in contamination in accordance with 10 CFR 31.5(c)(5).

A11.8.4. Upon change to a mailing address for the location of use or general licensee name.

**Attachment 12****RADIOACTIVE MATERIAL INCIDENT AND MISHAP (DEFECT AND NONCOMPLIANCE) CHECKLIST****A12.1. Personnel making a report must include:**

A12.1.1. The organization and individual making the report and their telephone number, telefax number, and mailing address.

A12.1.2. The organization responsible for the radioactive material or device and parent MAJCOM.

A12.1.3. A description of the incident, defect, or noncompliance including:

A12.1.3.1. The date and time that the event occurred or when personnel discovered it.

A12.1.3.2. The specific location where the event occurred.

A12.1.3.3. A narrative of how the event occurred or your best estimate of how it occurred.

A12.1.4. A description of hazard abatement actions taken or planned and an estimate of how long it will take to complete them.

A12.1.5. Radioisotopes and an estimate of their quantities in grams, pounds, or Curies. If the incident involves sealed sources, then give the manufacturer, models, and serial numbers.

A12.1.5.1. Surfaces and dimensional areas of contaminated equipment, facilities, or ground, and results of radiation surveys for radiation levels in mrads or mGy/hr and contamination in disintegrations per minute (dpm).

A12.1.5.2. Concentrations of radioactive material estimated or measured in air, water, and soil in mCi per grams or liter or milligrams per gram or liter.

A12.1.6. Names, grades, social security account numbers, and phone numbers of military and civilian personnel involved or exposed to radiation or radioactive material. Estimated levels of exposure or intake that people received, levels of radiation or concentrations that caused the exposure.

A12.1.7. Instruments and methods used for personnel exposure estimates and surveys.

A12.1.8. The name of the nearest community, town, or city and military installation.

A12.1.8.1. Risk assessment of exposure to any member of public.

A12.1.8.2. If the event occurred on installation, then give the location of the nearest access by public or installation residents, the nearest housing, and the nearest workplaces.

A12.1.9. The manufacturer, supplier, or construction firm of defective items or structures and any other locations and telephone numbers where personnel use like items.

A12.1.10. The installation organizations and the titles of people responding to the incident.

A12.1.11. Other Air Force, Federal, state, or local organizations or representatives that you have notified.

A12.1.12. The names of news organization asking for press releases and any press releases supplied.

A12.1.13. Applicable US Air Force Radioactive Material Permit or NRC License Number and Docket Number.

## Attachment 13

## INSPECTIONS POLICY

**A13.1. Introduction.**

The inspection program for permitted and generally licensed radioactive material is under the jurisdiction of the RIC is expressly covered by this instruction. It is an assigned function of the RICS and must be prioritized to the RICS and sufficiently resourced. It serves to validate compliance with permit conditions, this instruction and Federal regulations (e.g. NRC and DoT). Inspections of permits shall be conducted by the AF Inspection Agency, Medical Operations Directorate (AFIA/SG), the U.S. Nuclear Regulatory Commission (NRC) or collaboratively. Inspections shall combine a "performance" based evaluation in accordance with NRC Manual Chapter 2800, *Materials Inspection Program*, and as necessary, may apply a "prescriptive" evaluation to ensure the implementing conditions of this AFI are accomplished. The frequency and duration of the inspection shall be based on the inspection priority assigned by the RICS, complexity of the permit, overall risks of the permitted activity and opportunity to witness infrequent or unique procedures. Inspections by either organization shall avoid interference with the permittee's operational obligations; however, a permittee shall not delay inspections based on inconvenience. **NOTE:** 10 CFR 30.52 states, "Each licensee shall afford to the NRC at all reasonable times the opportunity to inspect byproduct material and the premises and facilities wherein byproduct material is used or stored. Each licensee shall make available to the NRC for inspection, upon reasonable notice, records kept by him." This access shall also be afforded to AFIA/SG.

**A13.2. Inspection Protocol**

A13.2.1. The AFIA/SG inspector shall be in uniform, credentialed with a DOD common access card (CAC) and either possess a badge, orders or a list of telephone numbers from which the permittee may call for verification. The inspector shall have a clearance verified in the Joint Clearance and Access Verification System (JCAVS). The NRC shall have identification and, as necessary, be able to demonstrate appropriate clearance. The permittee has a right and duty to challenge unknown individuals presenting themselves as inspectors.

A13.2.2. Inspections are generally conducted unannounced, on-site and in person. Occasionally inspections shall be conducted at times outside of normal duty hours, particularly when the use or receipt of permitted material is conducted. A valid inspection involves AFIA/SG contact with the permittee, Permit Radiation Safety Officer (PRSO) or cognizant individual using material covered by the permit.

A13.2.3. Telephonic inspections may be performed per NRC Priority T criteria. These are generally reserved for geographically separated units, permits that are low risk (i.e., 5-7 year inspection frequency) or new permits where permitted materials have not yet been received. In those cases, the PRSO may be required to submit by mail, fax or e-mail permit documentation that would include: (1) Completed questionnaire, (2) inventory(s), (3) area surveys, (4) receipts for transferred RAM, and (5) annual briefing to the Commander. The PRSO shall submit to a telephonic inspection by AFIA/SG when requested. As necessary, an on-site or telephonic follow-up inspection may be conducted at any time.



A13.2.4. In some instances, whereby the individuals listed in [paragraph A13.2.2](#) may not be available, an attempt shall be made to schedule an inspection. This is generally done to accommodate permits for which the PRSO works part time (e.g., Air National Guard and AF Reserve Command units).

A13.2.5. A unit that has deployed the PRSO and does not have an alternate at base is still subject to inspection by AFIA/SG. Failure to comply with the conditions of the permit, this instruction or Federal regulations shall result in a violation, particularly if permitted material is not properly controlled. In this instance, AFMOA/SGPR may commence enforcement according to [Attachment 14](#).

A13.2.6. AFIA/SG is not required to pre-inspect any unit prior to an NRC inspection. Units are expected to be in compliance at all times. AFIA/SG is not required to inspect any unit following a NRC inspection where there are no Severity Level I-III violations. Generally, the clock on the next inspection will be restarted and occur at the frequency noted by the permit.

### **A13.3. Inspections Types**

A13.3.1. New permit. Shall be conducted approximately six months after permitted materials are received. Permittees are required to immediately notify AFIA/SG when permitted materials have been received.

A13.3.2. Routine. Shall be conducted at intervals established by the permit or as established in NUREG 1556, Volume 20. Inspection frequency may be changed based on permittee performance.

A13.3.3. Follow-up. Shall be conducted when permittees receive NRC Severity Level I-III violations. Such may also be requested by the RIC. They will occur within a year following closure of corrective actions.

A13.3.4. Collaborative. AFIA/SG may choose to accompany the NRC during an inspection. NRC inspections may occur at any time and are not bound by the intervals established by the permit or recentness of the last AFIA/SG inspection. Whereas there are no violations, AFIA/SG will re-start the clock for the next inspection. Conversely, the NRC may choose to accompany AFIA/SG during an inspection. Typically, the NRC does not issue a report under these conditions.

A13.3.5. Incident. May be conducted based on concern expressed by AFMOA/SGPR, the NRC or following a significant event (e.g., personnel health and safety violations, loss of control of radioactive material, radiation exposure exceeding regulatory guidelines, natural disaster or equipment failures). In these instances, AFIA/SG may conduct an off-cycle visit or inspection either unannounced or scheduled. This type of inspection is generally not rated but a report may be generated.

A13.3.6. Consultancy. Upon request of the permittee, AFIA/SG may conduct a scheduled visit to identify areas where assistance and improvements can be made. Furthermore, AFIA/SG may conduct a scheduled visit to advise the permittee on how to implement new AFIs or Federal regulations. Consultancy visits, requested by the permittee, are generally funded by the requesting organization. This type of visit shall not be rated but a report should be generated.

A13.3.7. Permit Termination. A termination inspection may be scheduled and conducted during or following the termination of a broadscope permit, remediation activity or permitted activity involving significant amounts of unsealed radioactive material, to assure the criteria of 10 CFR 20, Subpart E are met. This type of inspection shall not be rated but a report may be generated.

A13.3.8. Special Emphasis. As required and prescribed by the RICS, AFIA/SG shall provide for inspections of permitted and generally licensed radioactive material to ensure the Air Force remains in compliance with NRC regulations.

A13.3.9. Other. Wherever there is geographic clustering of permits, it may be advantageous for AFIA/SG to accelerate the date of the next inspection. This predominantly applies to permits with a 5 or 7-year inspection frequency and within one or two years of their next inspection. This would serve to align the inspection frequency of similar permits in a geographic region to reduce repetitive travel.

#### **A13.4. Severity Levels of Violations**

A13.4.1. AFIA/SG violations have been generally cross-referenced to NRC categories and Severity Levels. Since regulatory requirements have varying degrees of safety, safeguards, or environmental significance, violations of given requirements have differing levels of significance that are represented by the severity levels.

A13.4.2. Comparisons of severity between disparate activities (e.g., nuclear medicine vs. gauges) will not be made. Severity is assigned on a case-by-case basis. Repeat violations, willfulness and false representations will influence the severity of a violation.

A13.4.3. Minor – Below Severity Level IV. May not warrant documentation or enforcement. Examples under miscellaneous matters might include:

1. Lapse in inventory/transfer records without loss of material.
2. Lapse in PRSO appointment or expired permit without impact on safety.

A13.4.4. Severity Level IV. Non-compliance with NRC requirements and pose increased risk. Examples would be:

1. Health Physics. Failure to maintain and implement radiation programs to keep radiation exposures ALARA.
2. Miscellaneous. Information that the NRC requires be kept by a permittee and that is incomplete or inaccurate and of more than minor significance (e.g., area survey records).

A13.4.5. Severity Level III. Cause for regulatory concern. Examples would be:

1. Health Physics. Conduct of licensee activities by a technically unqualified person.
2. Miscellaneous. Delay in notifying the RIC upon loss of RAM.

A13.4.6. Severity Level II. Involve actual or high potential consequence on public and safety.

1. Health Physics. A radiation exposure of a declared pregnant worker during the gestational period in excess of 1.0 rem TEDE.

2. Miscellaneous. "Significant information identified by a permittee" and not provided to AFIA/ SG or the RIC because of careless disregard on the part of the PRSO.

A13.4.7. Severity Level I. Involve actual or high potential consequences on public health and safety.

1. Health Physics. An annual exposure of a member of the public in excess of 1.0 rem TEDE.
2. Miscellaneous. Inaccurate or incomplete information provided to AFIA/SG, RIC or the NRC in a deliberate nature, under official pretense and knowing such was incomplete.

### **A13.5. Inspection Violations and Actions**

A13.5.1. Minor. These are not violations per se; however, an inspection report may note findings and present recommendations. AFMOA/SGPR may require the permittee to reply to such. Implementation of recommendations is up to the permittee; however, disregarding them may potentially impact compliance.

A13.5.2. Severity Level IV. Generally, a permittee shall have 5 duty days from the receipt of the report to respond in writing to AFMSA/SG3PB and copy AFIA/SG and their MAJCOM. AFMSA/SG3PB reserves the right to accelerate the time of the response. AFIA/SG may recommend the RICS close violations in advance of enforcement if corrective actions can be demonstrated during the inspection or within 5 duty days thereafter.

A13.5.3. Severity Level I-III. Generally, a permittee shall respond within 24 hours upon verbal notification or report, whichever occurs first, to AFMOA/SGPR. A written copy of the response will be provided to AFIA/SG and their MAJCOM in 5 duty days. AFMOA/SGPR reserves the right to accelerate the time of the response.

A13.5.4. Stop Action. During the course of an inspection, AFIA/SG may determine a procedure or practice to be imminently dangerous to life and health (IDLH). In those cases, the inspector shall require the permittee to temporarily cease operations until corrective action is taken. As necessary, AFMOA/SGPR shall be contacted. The inspector shall not ask the permittee to perform a task that is hazardous, in contravention to the permit, this instruction, Federal regulations or has potential to disrupt operational activities.

A13.5.5. The AFIA/SG inspector shall offer to conduct an out-brief with the PRSO, permittee or cognizant individual(s). In cases where the inspection reveals significant findings or potential Severity Level I-III violation(s), an out-brief with the permittee and his/her Commander shall be mandatory. Moreover, AFIA/SG will contact AFMOA/SGPR prior to the out-brief of these type of findings. Following an inspection, AFIA/SG may call the permittee for clarifying information. Unless in conflict with this section, AFIA/SG shall generate a final report and assign a rating in 60 duty days. The permittee must initiate corrective actions in advance of any report.

A13.5.6. At a minimum, the final report shall be submitted to the permittee, AFMOA/SGPR, NRC Region IV and the permittee's MAJCOM/SG.

A13.5.7. On a quarterly basis, AFIA/SG shall provide the RIC a summary according to [paragraph 1.7.6](#).

**A13.6. Ratings.** AFIA/SG will issue either a rating of "Compliant" or "Not Fully Compliant" in the final report. Inspections that are Not Fully Compliant will report Severity Level I-IV violations that must be handled according to [paragraph A13.5](#). Whereas there may be no RAM or performance objectives to evaluate, a rating will not be issued.

**A13.7. Corrective Actions.** When a Severity Level I-IV violation is identified, corrective actions shall commence promptly. The permittee shall decide if the response needs to be coordinated with higher authorities or copied to their respective MAJCOM functionals. Response to violations shall contain, at a minimum, the following:

A13.7.1. Reference to the violation(s).

A13.7.2. Complete description of how the violations(s) were corrected or a timeline, with milestones, for corrective actions, to include:

1. the root cause for the violation(s) or, if contested, the basis for disputing it,
2. corrective actions that have been taken and the results achieved,
3. corrective actions that will be taken to avoid future violations, and
4. date when full compliance was or will be achieved.

A13.7.3. Designation of an office for monitoring corrective measures, to include a point of contact.

A13.7.4. Signature of the permittee. "For" signatures shall not be accepted without certification the permittee is aware of the corrective actions. A statement to that fact shall be placed in the body of the response letter. All letters shall be dated.

A13.7.5. Corrective actions to separate violations shall not be commingled. Each violation shall be addressed separately. However, reference to a specific corrective action from another violation can be made if such would resolve both violations.

**A13.8. Rebuttal.** If the permittee believes a violation to be invalid, then a written rebuttal shall be submitted to AFMOA/SGPR within the time limit in [paragraph A13.5](#). Such shall include reasons for rebuttal and reference the permit, AF instructions or Federal regulations. An unsupported opinion or supposition that corrective action is unattainable due to external constraints may not be acceptable to close the matter.

### **A13.9. Disposition**

A13.9.1. Closure. Upon receipt of a response to the violation from the permittee, AFMOA/SGPR shall consider the merit of the corrective actions and, if satisfied, render a closure letter. A closure letter shall be submitted to the permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG.

A13.9.2. Non-Closure. If AFMOA/SGPR determines corrective actions are not acceptable to close the violations, enforcement actions may be taken according to [Attachment 14](#). Enforcement actions shall be submitted to the permittee and copied, at a minimum, to their MAJCOM/SG and AFIA/SG.

**Attachment 14****RIC ENFORCEMENT POLICY****A14.1. Introduction and Basic Enforcement Actions**

This section describes the enforcement actions available to the RIC in the administration of the Air Force's MML, and specifies the conditions under which each may be used. The basic enforcement actions are Notices of Violation and Orders of various types. Enforcement action is usually taken whenever a violation of permit requirements or regulations of more than a minor concern is identified. The nature and extent of the enforcement action is intended to reflect the seriousness of the violation involved. For the vast majority of violations, a Notice of Violation (NOV) is the usual action. NOVs are sent to the permittee, with copies to the AFIA/SG, NRC and MAJCOM Bioenvironmental Engineer, MAJCOM IG, and MAJCOM functional 2-letter (if outside of MAJCOM/SG). They specify the nature of the violation(s) (permit condition, permit tie-down, this AFI, or Federal regulations) and require a response for corrective action by a set date.

**A14.2. Escalated Enforcement Actions, RIC and RIC Secretariat Directives**

Whenever inspections identify conditions or violations that result in significant regulatory concern, escalated enforcement action through an issued directive is considered. As authorized by this instruction and AFD 40-2, a directive is a mandatory written order to modify, suspend, or to cease and desist from a given practice or activity; or to take additional action as deemed appropriate. Directives may be issued in lieu of, or in addition to NOVs, generally for Severity Level I, II, or III violations or other conditions that cause significant regulatory concern. Directives are mandatory and made effective immediately. Directives may be executed without prior notice for consultation with the permittee whenever it is determined that the public health, interest, or safety requires, or when the order is responding to a violation involving willful negligence. For other cases, the permittee shall be afforded an opportunity to demonstrate why the order should not be issued. Directives may be issued as follows:

A14.2.1. Permit Modification. Permit Modification Orders are issued by AFMOA/SGPR when a change in permittee equipment, procedures, personnel, or management controls is necessary.

A14.2.2. Suspension Orders. Suspension Orders are issued by AFMOA/SGPR and signed by AF/SGOP and may apply to all or part of the permitted activity. Ordinarily, a permitted activity is not suspended (nor is a suspension prolonged) for failure to comply with requirements where such failure is not of willful intent and adequate corrective action has been taken. Suspension Orders may be used to remove a threat to the public health and safety, or the environment:

1. When the permittee has not responded adequately to other enforcement action;
2. When the permittee interferes with the conduct of an inspection or investigation; or
3. For any reason not mentioned above for which permit activity suspension is authorized by the RIC or AFMOA/SGPR in coordination with AF/SGOP.

A14.2.3. Revocation/Termination Orders. Revocation/Termination Orders are issued by AFMOA/SGPR or the RIC and signed by AF/SGOP.

1. When a permittee is unable or unwilling to comply with permit requirements;
2. When a permittee refuses to correct a violation;
3. When a permittee does not respond to a Notice of Violation when a response was required by AFMOA/SGPR or
4. For any other reason for which revocation is authorized by the RIC or by AFMOA/SGPR in coordination with AF/SGOP (i.e., any condition that would warrant refusal of a permit on an original application).

A14.2.4. Cease and Desist Orders. Cease and Desist Orders are issued by AFMOA/SGPR or the RIC and signed by AF/SGOP and may be used to stop an unauthorized activity that continues after being notified by AFMOA/SGPR that the activity has been deemed unauthorized.

A14.2.5. Confirmatory Action Letters. Confirmatory Action Letters are issued by AFMOA/SGPR confirming a permittee's agreement to take certain actions to eliminate significant concerns about health and safety, safeguards, or the environment.

A14.2.6. Demands for Information. Demands for Information are mandated requests of information from permittees or other persons for the purpose of enabling AFMOA/SGPR to determine whether an order or other enforcement action should be issued.

A14.2.7. Other Orders. In addition to the Orders describe above, Orders may be issued to permittees that include but are not limited to:

1. divert facility financial resources to purchase, replace, or excess and dispose of certain equipment;
2. increase the frequency of facility safety committee meetings;
3. implement meetings between the facility executive management and the RSO on a frequent and routine basis;
4. perform additional or supplemental training to permittee staff;
5. increase frequencies of facility internal audits or other internal surveillance; and
6. appear before the RIC to present corrective actions and associated implementation timelines.

### **A14.3. Factors Impacting Escalated Enforcement Actions**

A14.3.1. Initial Escalated Action: When the RIC or AFMOA/SGPR is made aware of conditions or violations where escalated enforcement action may be necessary, deliberations are held to determine the severity level of the findings and factors that may affect that level. Serious findings will often include deliberations with the NRC. If it is established that an unwillful Severity Level III violation or problem has occurred, and the permittee has not had any previous escalated actions (regardless of the activity area) during the past 2 years or 2 inspection cycles, whichever is longer, AFMOA/SGPR will consider whether the permittee's corrective action for the noted violation or problem is reasonably prompt and comprehensive.

The starting point of this period shall be considered the date when the permittee was put on notice to take corrective action.

A14.3.2. Credit for Actions Related to Identification: If a Severity Level I or II violation or a willful Severity Level III violation has occurred, or if, during the past two years or two inspection cycles, whichever is longer, and the permittee has been issued at least one other escalated action, the escalated enforcement actions shall consider the factor of identification in addition to corrective action. The decision on identification requires considering all the circumstances of identification including:

1. Whether the problem requiring corrective action was AFIA/SG identified, AFMOA/SGPR-identified; permittee-identified, or discovered through an event;
2. Whether prior opportunities existed to identify the problem requiring corrective action, and if so, the age and number of those opportunities;
3. Whether the problem was discovered as the result of a permittee's self-monitoring effort, such as conducting an audit, a test, a surveillance, a design review, or troubleshooting;
4. For a problem discovered through an event, the ease of discovery, and the degree of permittee initiative in identifying the root cause of the problem and any associated violations;
5. For AFIA/SG identified issues, whether the permittee would have likely to identified the issue in the same time-period if the Agency had not been involved;
6. For AFIA/SG identified issues, whether the permittee should have identified the issue (and taken action) earlier; and
7. For cases in which AFIA/SG identifies the overall problem requiring corrective action (i.e., a programmatic issue), the degree of permittee initiative or lack of initiative in identifying the problem or problems requiring corrective action."

A14.3.3. Prompt and Comprehensive Corrective Action: Comprehensive corrective action is required for all MML violations. In most cases, AFMOA/SGPR does not propose escalated enforcement actions where the permittee promptly identifies and comprehensively corrects violations. However, a Severity Level III violation or higher will almost always result in escalated enforcement actions if a permittee does not take prompt and comprehensive corrective actions to address the violation. The following factors are considered:

A14.3.3.1. Timeliness and Extent of Corrective Action.

1. Consideration will be given to the:
  - a. timeliness of the corrective action (including the promptness in developing the schedule for long term corrective action),
  - b. adequacy of the permittee's root cause analysis for the violation, and
  - c. comprehensive nature of the corrective action (i.e., whether the action is focused narrowly to the specific violation or broadly to the general area of concern).

2. The permittee takes immediate actions necessary, upon discovery of a violation, that will restore safety, and return the permit to full compliance; and
3. Develop and implement the lasting actions that will not only prevent recurrence of the violation, but will be comprehensive enough, given the significance and complexity of the violation, to prevent occurrence of violations with similar root causes.

A14.3.3.2. Adequacy of Corrective Actions. AFIA/SG will assist AFMOA/SGPR to determine adequacy of correction actions to violations. AFMOA/SGPR shall determine the adequacy of corrective actions to violations that are self-identified, result from an event, or are MML-identified. The judgment of the adequacy of corrective actions may also occur at the time of an enforcement conference (i.e., by outlining substantive additional areas where corrective action is needed).

A14.3.3.3. Corrective Action Process. The following shall be used for developing and implementing corrective actions. Corrective action shall be comprehensive enough to not only prevent recurrence of the violation at issue, but also to prevent occurrence of similar violations. These items should help in focusing broad corrective actions to the general area of concern rather than to specific violations. The actions that need to be taken are dependent on the facts and circumstances of the particular case. The corrective action process should involve the following steps:

1. Conduct a complete and thorough review of the circumstances that led to the violation,
2. Identify the root cause of the violation, and
3. Take prompt and comprehensive corrective action that will address the immediate concerns and prevent recurrence of the violation.

#### **A14.4. Enforcement Conferences**

A14.4.1. When a permittee has been issued a violation and fails to conform to effective corrective actions, the RIC or AFMOA/SGPR may decide to initiate an enforcement conference with the permittee to define the actions necessary to begin effective corrective measures to the violation. AFMOA/SGPR will issue official correspondence to the permittee informing them of the enforcement conference. The enforcement conference can be implemented by any necessary means to affect a productive dialogue between the permittee, the RIC and AFMOA/SGPR.

A14.4.2. The purpose of the conference is for the RIC or AFMOA/SGPR to gather the necessary facts and information from the permittee in order to make an informed decision about the violation. Objectives of the conference will include determining:

1. the root cause and analysis of the violation(s),
2. that a permittees response is deemed timely and appropriate, and
3. that corrective actions to prevent similar recurrence of the violation(s) have been taken.

A14.4.3. Results of the enforcement conference will be formalized by AFMOA/SGPR with correspondence to the permittee describing the actions the permittee must perform to resolve the violation(s).



**A14.5. Appealing Enforcement Actions**

The permittee or any other person adversely affected by a NOV or Order may appeal a NOV or enforcement sanction. The permittee may submit an appeal via official correspondence to AFMOA/SGPR for the violations and findings. The permittee must provide ample regulatory justification in the correspondence to warrant an appeal of the violations. The RIC shall review the appeal by the permittee and decide actions to be taken based on the merit of the request, corrective actions taken by the permittee, and the severity levels of the violations. The RIC may at its option, initiate a review of permittee program operations concerning the enforcement action, grant the appeal to mitigate the severity level of the violation and/or enforcement actions, or deny the appeal.

**A14.6. NRC Related Administrative Actions**

In addition to the enforcement actions by the RIC and RIC Secretariat, the NRC also uses administrative actions, such as Notices of Violation, Notice of Deviation, Notices of Nonconformance, Confirmatory Action Letters, Letters of Reprimand, and Demands for Information to supplement its enforcement program. The NRC may issue orders and impose civil penalties for violations of NRC regulations and MML license conditions. Note that any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued and any response must be posted by the permittee per 10 CFR 19.11(a)(4).

A14.6.1. Civil Penalty. Only the NRC may impose civil penalties. A civil penalty is a monetary penalty that may be imposed by the NRC for violation of certain specified licensing provisions of the Atomic Energy Act or supplementary NRC rules or orders, any requirement for which a MML permit or NRC license may be revoked, reporting requirements under Section 206 of the Energy Reorganization Act, and NRC Regulations and MML program conditions. If the application of the normal guidance in this policy does not result in an appropriate sanction, as warranted, then the NRC may apply its full enforcement authority where the action is warranted. NRC action may include civil penalties, issuing appropriate orders, and assessing civil penalties for continuing violations on a per day basis, up to the NRC limit per violation.

A14.6.2. Mitigation of Enforcement Actions. The NRC may exercise discretion and refrain from enforcement action, if the outcome of the normal process described in this policy does not result in a sanction consistent with an appropriate regulatory message. In addition, even if the NRC exercises this discretion, when the permittee failed to make a required report to AFIA/SG or AFMOA/SGPR, a separate enforcement action will be issued for the permittee's failure to make a required report.

**A14.7. Enforcement Actions Involving Individuals**

An enforcement action against an individual will be taken only when the RIC or AFMOA/SGPR is satisfied that the individual fully understood, or should have understood, his or her responsibility; knew, or should have known, the required actions; and knowingly, or with careless disregard (i.e., with more than mere negligence) failed to take required actions which have actual or potential safety significance. Transgressions of individuals at the level of Severity Level III or IV violations will be handled by citing the facility permittee with a requirement that specific actions concerning the individual be taken.

A14.7.1. Management Failures. Action against an individual will not be taken if it demonstrates that the improper action by the individual was caused by management failures. The following are examples of situations to illustrate this concept:

1. Inadvertent individual mistakes resulting from inadequate training or guidance provided by the permittee.
2. Inadvertently missing an insignificant procedural requirement when the action is routine, fairly uncomplicated, and there is no unusual circumstance indicating that the procedures should be referred to and followed step-by-step.
3. Compliance with an express direction of management that resulted in a violation unless the individual did not express his or her concern or objection to the direction.
4. Individual error directly resulting from following the technical advice of an expert (e.g. consultant or subcontractor) unless the advice was clearly unreasonable and the permitted individual should have recognized it as such.

#### **A14.8. Willful Violations and Actions of Individuals**

If the actions described in these examples are taken by permittee authorized individuals or otherwise taken deliberately by an individual working under permitted activities, then enforcement action may consist of requiring actions be taken directly concerning the individual. Listed below are examples of situations that could result in enforcement actions against individuals. The situations include, but are not limited to, violations that involve:

1. Willfully causing a permittee to be in violation of permit requirements.
2. Willfully taking action that would have caused a permittee to be in violation of requirements but the consequence(s) of the action did not occur because it was detected and corrective action was taken.
3. Recognizing a violation of procedural requirements and willfully not taking corrective action.
4. Willfully defeating alarms and/or interlocks that have safety significance.
5. Dereliction of duty.
6. Falsifying records required by MML requirements or by the permittee.
7. Willfully providing, or causing a permittee to provide, an Inspection Agency inspector with inaccurate or incomplete information on a matter material to the radiation protection program.
8. Willfully withholding safety significant information rather than making such information known and available to appropriate supervisory or technical personnel in the permittee's organization.

A14.8.1. Factors in Deciding Enforcement Actions: In its determination of whether to issue requirements that actions be taken concerning an individual, the following factors will be considered:

1. The level of the individual within the organization.
2. The individual's training and experience as well as knowledge of the potential

consequences of the misconduct

3. The safety consequences of the misconduct.
4. The degree of supervision of the individual, i.e., how closely is the individual monitored or audited, and the likelihood of detection.
5. The employer's response, e.g. disciplinary action taken.
6. The attitude of the offender e.g. admission of misconduct, acceptance of responsibility.
7. The degree of management responsibility or culpability.
8. Who identified the misconduct.

A14.8.2. Types of Enforcement Actions: Any proposed enforcement action against individuals must be issued by the RIC. The particular sanction to be used should be determined on a case-by-case basis. Notices of Violation and Orders are examples of enforcement actions that may be appropriate involving individuals. Orders involving individuals might include provisions that would:

1. Prohibit involvement in MML Program permitted activities for a specified period of time (normally the period of suspension would not exceed 5 years) or indefinitely, or
2. Until certain conditions are satisfied, e.g. completing specified training or meeting certain qualifications.
3. Orders to management requiring retraining, additional oversight, or independent verification of activities performed by the person, if the person is to be involved in permitted activities.

A14.8.3. Disciplinary Enforcement. Adverse personnel actions and other disciplinary actions are the responsibility of the organization to which the individual to be disciplined belongs. Discretion may be exercised by either escalating or mitigating enforcement action to ensure that the proposed enforcement action reflects the Inspection Agency and AFMOA/SGPR's concerns regarding the violation(s) at issue and that it conveys the appropriate message to the permittee.

#### **A14.9. Violations of Reporting Requirements or Submitting False Information**

A14.9.1. Reporting: Permittees are expected to provide complete, accurate, and timely information and reports when required. A permittee will not usually be cited for a failure to report a condition or event unless the permittee was actually aware of the condition or event that it failed to report. A permittee will, on the other hand, usually be cited for a failure to report a condition or event if the permittee knew of the information to be reported, but did not recognize the reporting requirements.

A14.9.2. Inaccurate and Incomplete Information: A violation of the MML requirements involving submittal of incomplete and/or inaccurate information can result in the full range of enforcement actions.

A14.9.2.1. Identification of false information. The labeling of a communication failure as a material false statement will be made on a case-by-case basis and will be reserved for egregious violations. Violations involving inaccurate or incomplete information or the

failure to provide significant information identified by a permittee will be categorized based on:

1. the degree of knowledge that the communicator should have had, regarding the matter, in view of his or her position, training, and experience;
2. the opportunity and time available prior to the communication to assure the accuracy or completeness of the information;
3. the degree of intent or negligence, if any, involved;
4. the formality of the communication;
5. the importance of the information which was wrong or not provided;
6. the rationale of the explanation for not providing complete and accurate information;
7. efforts taken to correct information that is later identified as false or incomplete; and
8. failures to correct false or incomplete information.

**Attachment 15****MANAGING ALLEGATIONS****A15.1. Introduction**

The RIC's objective is to maintain a safe working environment for radiation safety personnel and for all staff members at a permittee's facilities. If an employee is aware of unsafe conditions or potential regulatory violation(s), then that person is responsible to report their concerns immediately to their supervisor. The employee can report the unsafe condition or potential violation allegation directly to AFMOA/SGPR or the NRC (Reference: *Reporting Safety Concerns to the NRC* (NUREG/BR-0240, Rev. 3)), but the employee is strongly encouraged to report the unsafe condition allegation through their chain of command to allow organizational awareness of the condition and provide corrective actions. All permittee employees are required to be aware of NRC Form 3, **Notice to Employees**, that includes posting the form for all employees to view. Allegations will be investigated and reported in accordance with NRC Management Directive 8.8, *Management of Allegations*.

**A15.2. Receipt of Allegation**

A15.2.1. Upon initial receipt of contact from an individual making allegations, the AFMOA/SGPR member should determine initial background information from that individual before proceeding with the potential allegation. Initial information should consist of:

1. name of the person,
2. contact information of the person,
3. job position of person,
4. place and date of allegation,
5. description of allegation,
6. other individuals affected by allegation,
7. command awareness of allegation, and
8. any health or safety related issue

A15.2.2. Once the initial contact has been made with the person making the allegation, the AFMOA/SGPR member shall provide the information below to the allegor before proceeding with investigating the allegation:

1. Section 211(a) of the Energy Reorganization Act of 1974 as amended by the Energy Policy Act of 1992 prohibits an employer from discriminating against an employee for contacting the NRC.
2. Any civilian can file a complaint with the Department of Labor (DOL) if that person believes a MML permittee has acted against that person in violation of the prohibition. The Energy Reorganization Act gives jurisdiction to DOL for conducting a hearing on the issue and for determining whether the law was violated. If the DOL requires any corrective actions in its decision, further corrective action may be required by the

NRC, the RIC and/or AFMOA/ SGPR. If the allegation involves a health or safety violation, then the NRC and/or RIC through AFMOA/SGPR will determine corrective action(s) prior to the final decision by the DOL.

3. Information provided under the Freedom of Information Act (FOIA) will, to the extent consistent with that act, be purged of names and other potential identifiers of individuals making the allegation, but disclosures may be necessary under this Act.
4. No reference to follow-up of an allegation or employee concern will be entered on the inspection forms, inspection reports, or other documents that will be filed in the permitting file for the permittee.
5. AFMOA/SGPR will protect the identity of the individual making the allegation, and any identifying information of that individual will not be used in discussions of allegations, internal AFMOA/SGPR documents, or documents released to the permittee or the members of the general public.
6. The RIC through AFMOA/SGPR is responsible for resolving each allegation it has received and notifying the allogger of the results of the investigation.

A15.2.3. After initial receipt of an allegation, a brief written report should be forwarded to AFMOA/ SGPR for review and determination of the main merits of investigating the allegation. The allegation will then be presented to the RIC. This case will be referred to AFIA/SG and a second independent consultant to begin the investigation, as determined by the RIC. The AFMOA/SGPR representative investigating the allegation will provide a final report of the investigation to the RIC for its review. An allegation involving a health or safety issue will have a higher priority for review and plan of action.

### **A15.3. Protecting the Identity of Individuals making Allegations**

The name of the individual(s) making the allegation(s) and other identifying information which could potentially identify the individual(s) will not be used in discussions of allegations or documents released to the permittee or members of the public related to the allegation. The identity of the individual(s) will be protected, and the Inspection Agency will not advise a permittee that an inspection is based on an allegation. Exceptions to this policy include:

1. the circumstance where the individual has no objection to the release of his/her identity and is documented in the allegation file,
2. communications within and between the RIC, RIC Secretariat, the NRC, the AF Inspection Agency, and other parties that require knowledge of this identity to properly manage the allegation, or
3. the circumstance where such protection would impact worker health and safety.

### **A15.4. Maintenance of Allegation Files**

AFMOA/SGPR maintains the official file of all information pertaining to each allegation. It is important that AFMOA/SGPR and RIC members assure there is no unauthorized reproduction of information related to an allegation. Copies of allegation files may be made following approval by the AFMOA/SGPR case representative. All copies made of an allegation file must be returned to the file or destroyed. These files must be maintained in a manner that is consistent with the Privacy Act.

**A15.5. Allegation Information in Inspection Reports**

The investigation into the allegation should be documented in an inspection report. It is important that the inspection reports protect the identity of the individual(s) making the allegation(s) and not provide any information in the report that may reveal his/her identity. The inspection report should not contain any detailed information of the inspection that would correlate the inspection to an allegation. The inspection report findings should be included in the allegation file for the respective allegation case for final resolution by the RIC.

**A15.6. Resolution of Allegations**

The RIC will review all allegations received. Once all of the necessary information related to the allegation has been collected, the RIC will review the allegation file to determine if any further actions are required before a final decision is made. If any findings of an allegation investigation are in violation of the regulations, then the severity level of the violation will determine the response by the RIC to the command as described in the Enforcement Policy, **Attachment 14**.

**A15.7. Allegation Close-Out Report**

Once the final disposition of an allegation is approved by the RIC, a formal response and close-out report of the RIC findings will be forwarded to the individual(s) who made the allegation by AFMOA/SGPR. If the individual(s) does/do not agree with the findings of the RIC, then the individual(s) may appeal the findings of the RIC with any additional information necessary to support the appeal of the final allegation findings.